NMMA—Annual Meeting—Fergus Falls—Aug. 28-29, 1953

SMMA—Annual Meeting—Mankato—September 14, 1953

DOES NOT CIRCULATE

UNIVERSITY OF MICHIGAN
AUG 28 1953
MEDICAL

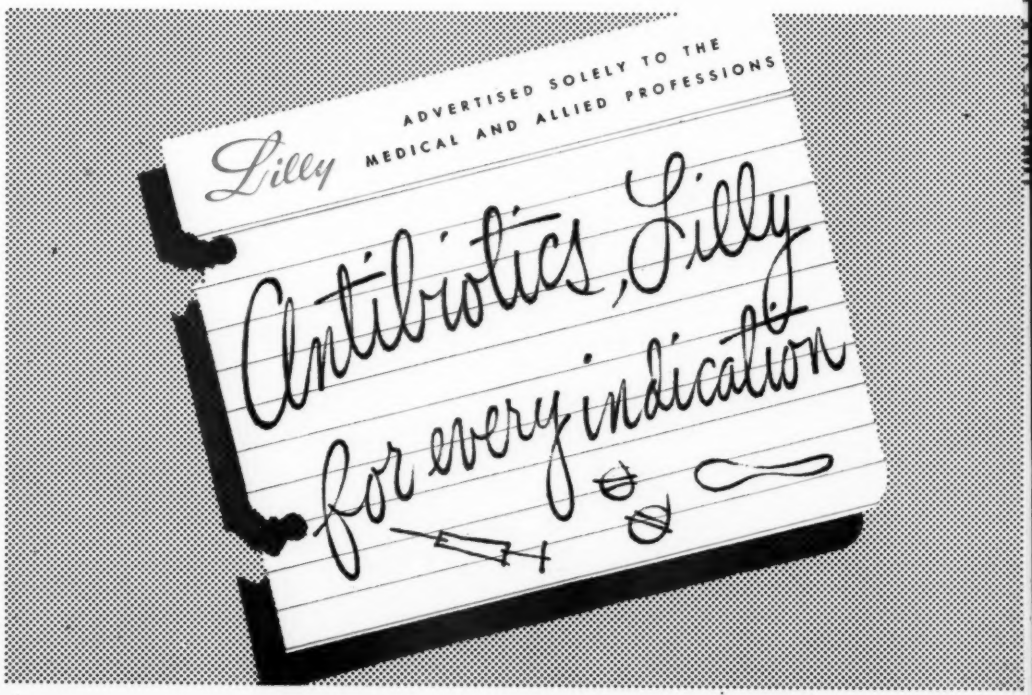
Minnesota MEDICINE

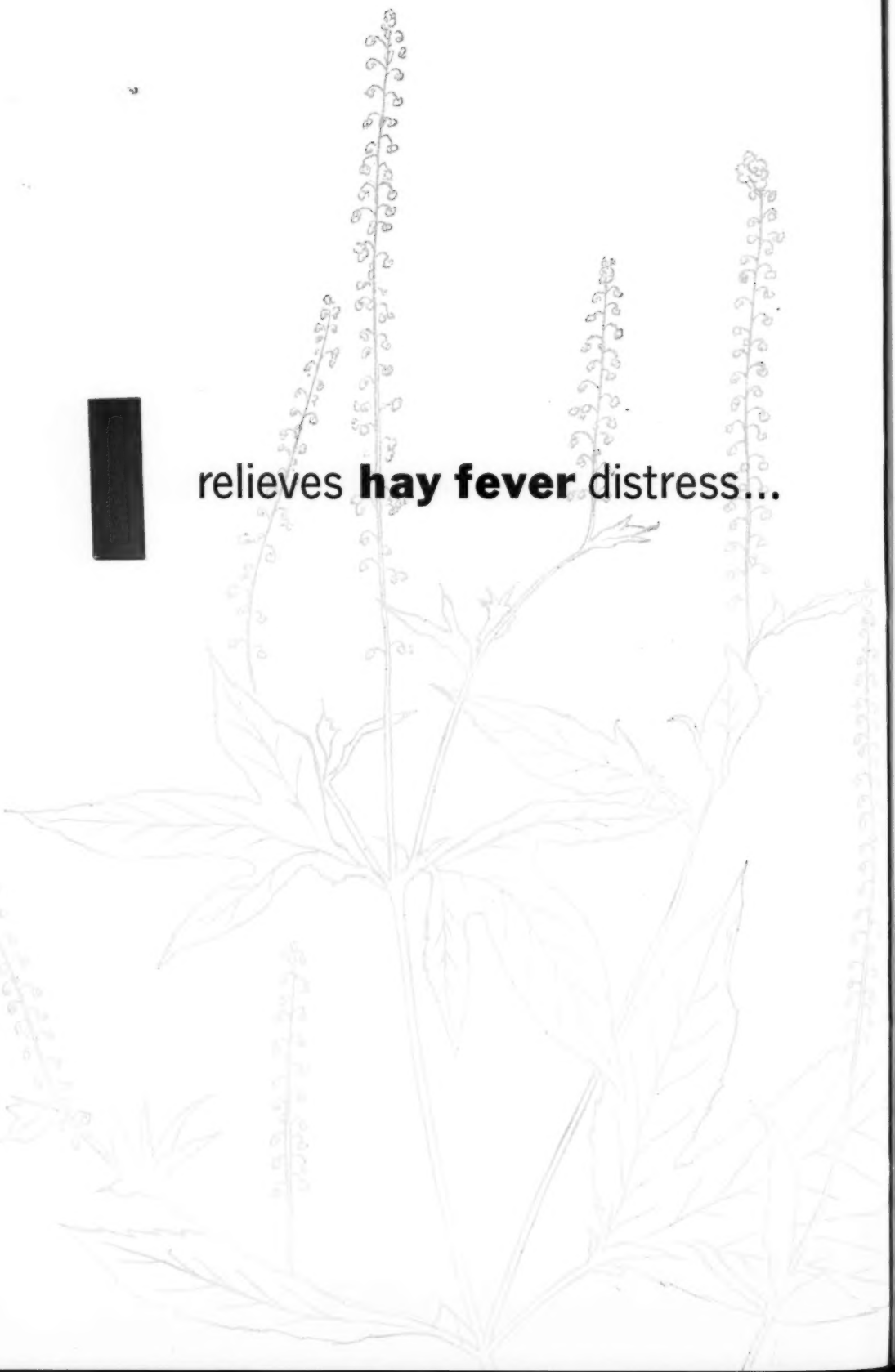
PUBLISHED MONTHLY BY THE MINNESOTA STATE MEDICAL ASSOCIATION

Volume 36 AUGUST, 1953 Number 8

Printed in U.S.A.

40c a copy—$3.00 a year





relieves **hay fever** distress...

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **August, 1953** **Number 8**

Contents

THE USE OF RADIOISOTOPES IN TREATMENT.
J. E. Rall, M.D., Ph.D., New York, New York.. 817

DIAGNOSIS AND TREATMENT OF POSTPOLIOMYELITIC CONTRACTURES.
Marcel H. Vandemoortele, M.D., and *Paul R. Lipscomb, M.D.*, Rochester, Minnesota..... 824

CANCER OF THE TONGUE.
Arnold J. Kremen, M.D., Minneapolis, Minnesota 828

SOLITARY NONPARASITIC CYSTS OF THE LIVER.
David Gaviser, M.D., Minneapolis, Minnesota.... 831

THE USE OF THE KUNTSCHER NAIL FOR FRACTURES OF THE FEMORAL SHAFT.
Daniel J. Moos, M.D., Minneapolis, Minnesota.. 837

ALLERGIC REACTION TO PARA-AMINOSALICYLIC ACID.
Robert P. Koenig, M.D., Paynesville, Minnesota.. 850

HISTORY OF MEDICINE IN MINNESOTA.
Medical History of the County of Yellow Medicine. *(Continued)*
Mildred B. Lee, Granite Falls, Minnesota..... 851

PRESIDENT'S LETTER.
Round-up Season 858

EDITORIAL:
New Editor and Business Manager..... 859
Medical Licensure Statistics for 1952..... 859
Cancer Warnings Not Overdone..... 860

THE DEAN'S PAGE.
University Hospitals Admission Policy..... 861

MEDICAL ECONOMICS:
Increase Noted in Medical Education Fund..... 862
State Medicine Has Economic Appeal..... 862
AMA Reapproves Medical Expense Deductions.. 863
Social Security System Hit by Senator Bricker.. 863
Health Insurance Book Available from AMA.... 864

AMERICAN MEDICAL ASSOCIATION—House of Delegates—Résumé of Proceedings—New York City June 1-5, 1953..... 865

REPORTS AND ANNOUNCEMENTS..... 872

WOMAN'S AUXILIARY 879

IN MEMORIAM 880

OF GENERAL INTEREST..... 884

BOOK REVIEWS 892

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. HAMMES, Saint Paul
PHILIP F. DONOHUE, Saint Paul
L. M. EATON, Rochester
J. J. HEIMARK, Monterey
C. L. OPPEGAARD, Crookston
T. A. PEPPARD, Minneapolis
H. A. ROUST, Montevideo
O. W. ROWE, Duluth
HENRY L. ULRICH, Minneapolis
A. H. WELLS, Duluth

EDITORIAL STAFF

CARL B. DRAKE, Saint Paul, Editor
GEORGE EARL, Saint Paul, Associate Editor
HENRY L. ULRICH, Minneapolis, Associate Editor

BUSINESS MANAGER
J. R. BRUCE

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 59

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **August, 1953** **Number 8**

THE USE OF RADIOISOTOPES IN TREATMENT

J. E. RALL, M.D., Ph.D.
New York, New York

THE WIDESPREAD use of radioisotopes in research represents one of the major advances in investigative techniques in several decades. The use of radioisotopes for treatment, however, is so difficult that great and important successes have been attained with only one isotope in the treatment of one disease.

Radioisotopes differ from non-radioactive elements in their instability which can only be relieved by the emission of some type of radiation and consequent transformation into another isotope. Hence, treatment with radioisotopes is really treatment with radiation. Radiation is a relatively old weapon of destruction, but in spite of much investigation and use, surprisingly little is known of how radiation can kill living tissue with a most astonishing efficiency. It can be calculated that a fatal dose of whole body x-ray, if it were entirely changed into heat would warm a man less than 1.0° Centigrade. This is certainly a frightening kind of efficiency. Ionization in the nucleic acids, disturbing the orderly synthesis and degradation of these most necessary cellular elements, is probably the mechanism by which such a deadly effect is obtained.

In the past, the naturally occurring radioisotopes of radium and x-rays have constituted the means of obtaining the radiation. Since radium decays into the gas, radon, it is a somewhat inconvenient material to manipulate and it has been suggested that, had the present gamut of radioisotopes been available when radiation was first discovered, radium would have been the element least likely to be used for its radiation.[5] Since radioisotopes can be used for treatment only because of the radiation they emit, let us first discuss the application of radioisotopes to conventional radiotherapy, secondly describe the possible use of radioisotopes by selective localization, and, finally, using as an example the treatment of carcinoma of the thyroid with radioiodine, examine the problems in the use of radioisotopes when selective localization is attempted.

I. The Application of Radioisotopes to Conventional Radiotherapy

With the incredibly complete arsenal of radioisotopes now provided it is possible to obtain any type of radiation with any degree of penetrating power one desires.

(a) *Radioisotopes as a substitute for X-ray treatment.*—It is now possible to obtain such very large quantities (2,000 curie sources) of radioisotopes which emit energetic gamma rays that the isotope can be heavily shielded and a beam of radiation directed toward a patient several feet away. There are certain technical and economic advantages to such a unit and several using cobalt 60 are now in use.[2] Cesium and iridium are also suitable for such a use and units utilizing these isotopes are under construction or in use.[4] It is also possible to utilize gamma radiation from these sources to take diagnostic radiographs. Except for independence from electric power

Dr. Rall is Associate Member of the Sloan-Kettering Institute, New York, New York.
From the Department of Clinical Investigation of Sloan-Kettering Institute and Memorial Center, New York, N. Y.
Read at the Centennial Meeting of the Minnesota State Medical Association, St. Paul, Minnesota, May 19, 1953.

sources, there are few advantages to the use of radioisotopes in this manner.

(b) *Radioisotopes as a substitute for superficial radiation.*—Radioisotopes can be obtained which emit only beta particles. They may be used absorbed in blotting paper or in any of a wide variety of applicators. Used this way they are considerably more efficient and are easier to handle than soft x-ray. Phosphorus 32 which is a pure beta emitter enjoys considerable popularity for this purpose.

(c) *Radioisotopes as a substitute for radium.*—Radioisotopes with strong gamma radiation may be used as solutions, as suspensions and as metals. This is a great advantage over the use of radium which has such a complicated decay scheme and which includes a gas as one of its products. Cobalt is particularly suited for use when needles or unusually shaped devices more efficiently and completely irradiate a desired area. Cobalt can be molded into any shape desired, irradiated in a reactor and almost any degree of radioactivity obtained. The finest individualization of each patient's particular problem is secured.

Gold 198 in colloidal suspension may be used somewhat differently. It may be injected into a tumor mass whose limits cannot be well defined or which involves essential structures that cannot be sacrificed surgically.[6] It has, for example, been used for the treatment of cancer of the prostate by injection directly into the area where the tumor lies.[3] This appears to be one of the more promising additions to the therapy of inoperable cancer.

(d) *Radioisotopes for intracavitary radiation.*—Patients with widespread peritoneal or pleural metastases frequently accumulate large amounts of fluid in these spaces and fluid accumulation and the results of repeated withdrawal of fluid cause the most distressing symptoms. The introduction of a radioactive material directly into the cavity frequently is a valuable palliative measure when it decreases or prevents further fluid accumulation. Gold 198, albumen labeled with iodine 131, chlorine 38 and krypton 87 have been used in this manner after the limit of tolerance by the skin to external radiation has been reached.[9,13] Cure of such cancers treated in this manner cannot be expected but valuable symptomatic relief is frequently obtained.

Another variation of this technique has been explored for the treatment of certain types of cancer of the bladder. A balloon is inserted in the bladder and filled with an isotope such as sodium 24 and any amount of radiation will then be conveniently administered.[14]

These uses of radioisotopes as just detailed, to supplant and extend radiation as it has been previously employed, are not spectacular but are of real utility. Furthermore, these uses will probably prove to be the main field in which radioisotopes will be employed in medical therapy. The dream of the physicists of the last decade was much more hopeful and had it materialized, would have revolutionized therapy. The hope entertained was that a substance could be found which would accumulate in tissue in high concentration and be retained there for a long time. Labeling of the substance with a radioisotope would then permit selective and destructive radiation of the tissue involved while the host was spared. This dream took two forms as follows:

II. (a) Concentration of Elements in Biological Systems

The more complex forms of life have learned to take advantage of the differing chemical properties of the elements and use some elments only for certain purposes. It is occasionally possible to capitalize upon this fact and substitute a radioactive isotope for the naturally occurring element. The classical situation is the thyroid gland and its undying affection for iodine. The use of iron as the respiratory pigment and of calcium for skeleton are examples of other uses of an element for either a single or a major purpose.

The outstanding example of the successful use of a radioisotope in treatment is, of course, the use of iodine 131 in the treatment of hyperthyroidism. The reasons for this success are the remarkable affinity of the thyroid for iodine, the relative scarcity of iodine in the diet, and the unusually long time that any iodine atom remains stored in the thyroid. These, and other considerations will be examined in more detail when we recount the problems in using iodine 131 for the treatment of cancer of the thyroid, since such treatment more clearly illustrates the general problems that are met in the attempted use of any

radioisotope for treatment when we administer the isotope internally.

Phosphorus is concentrated to a certain extent in bone marrow and has been used in the treatment of polycythemia vera and leukemia. Unfortunately it does not selectively damage either the erythropoietic or the leukopoietic systems and its use, particularly in leukemia, results in little more than general body radiation. Many hematologists, however, consider that phosphorus 32 is the treatment of choice in polycythemia vera.

The use of neutron induced radiation is an interesting variant of this technique. Javid has presented the theoretical considerations that are involved in the use of boron in the treatment of brain tumor.[7] When boron is exposed to a high flux of neutrons of a certain energy it captures the neutrons with an efficiency greatly exceeding that of the elements normally present in tissue. Boron then becomes boron 11 which disintegrates very rapidly into lithium with the emission of a very energetic alpha particle. The radiation from the alpha particles is highly destructive. The limitation in this method of treatment is the degree of localization of boron that can be achieved in the tumor. Furthermore, a high intensity source of neutrons which is only found in a reactor, is necessary. The advantage of this technique is that localization of boron in tissues other than those exposed to the neutron beam is of no consequence. The usefulness of this rather complicated procedure has yet to be fully evaluated.

II. (b) Concentration of Organic Compounds in Biological Systems

Most organic compounds are metabolized by the human organism in an extremely widespread and complex fashion. Certain compounds, however, are handled in a specific manner by specific tissues. Tetraiodophenolphthalein, for example, is secreted into the bile by the liver in a most rapid and efficient manner. The second dream of many investigators has been to develop a compound that will be localized in any given tissue in a very high concentration so that this compound may be labeled with a radioisotope and selective radiation accomplished. A study has actually been made of tetraiodophenolphthalein labeled with iodine 131 for the treatment of cancer of the gall bladder.[1] Unfortunately no definite therapeutic results were obtained. Amino acids known to be used by rapidly growing tissues have been studied as have purines used in the synthesis of nucleoproteins. A large body of important information regarding the metabolism of normal and neoplastic tissues has been obtained but it appears more and more certain that tumors utilize the same compounds in synthesis that normal tissue does and any biologically useful organic brick will be used for construction both by tumor and by normal tissues.

A somewhat different approach has been investigated very carefully by Pressman and his associates.[8] They first found that antibodies could be labeled with a radioisotope (sulphur 35 and iodine 131 were used) and retain their biological activity. They then found that tissue antibodies actually localized to a certain extent in the tissue against which they were prepared. Now they have found that chemical purification of the globulin fraction of the plasma containing the antibody caused an increased concentration of antibody in the tissue studied. The application of these studies in animals to therapy in man is a long and uncertain step and is surely one that will require some time for even preliminary evaluation. The crucial factor is the ratio of integrated tumor concentration of antibody to the integrated concentration of antibody in blood.

III. The Treatment of Cancer of the Thyroid with Radioiodine

The treatment of cancer of the thyroid with radioiodine, sometimes useless, sometimes brilliantly successful, illustrates more clearly the problems that are met with in the use of radioisotopes in such treatment. First is the problem of localization of iodine in the tumors. Cancer of the thyroid is subject to a certain degree of physiological control so there are several measures we can adopt to increase the degree of localization.[11] Figure 1 shows the results of thyroidectomy and thiouracil treatment in stimulating the uptake of radioiodine in metastases. These results are as good as can be obtained, since over 90 per cent of the isotope was finally localized in the cancer. In this particularly favorable and rather uncommon case, the problem of localization was solved, but further problems remained.

How much iodine 131 can we give this pa-

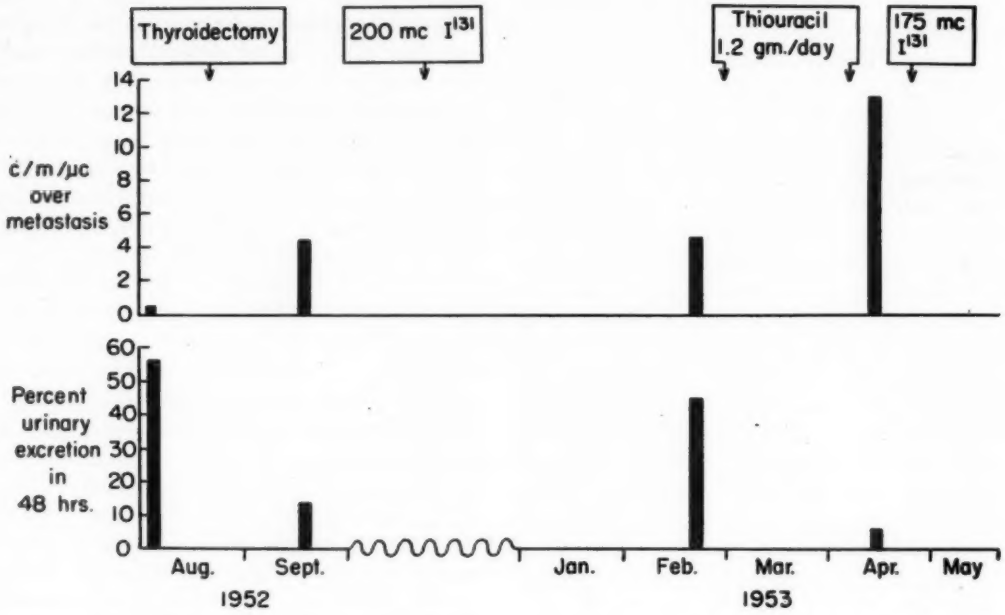


Fig. 1. The effects of thyroidectomy and thiouracil on the uptake of I^{-131} in a patient with cancer of the thyroid.

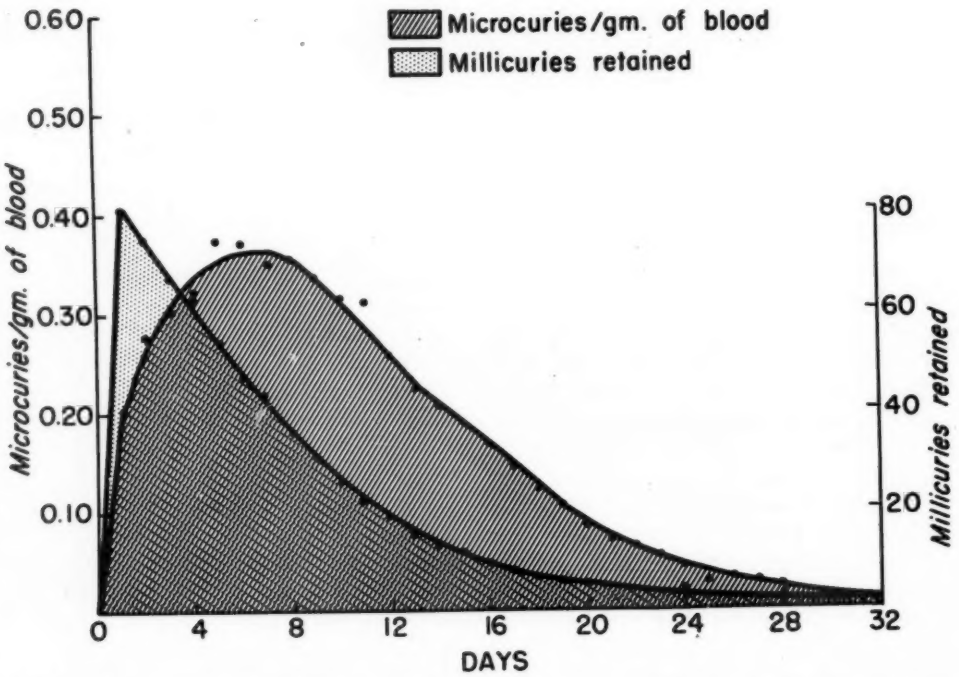


Fig. 2. The relative concentration of I^{-131} in the tumor and in the blood of a patient with cancer of the thyroid, given 107 millicuries I^{-131}.

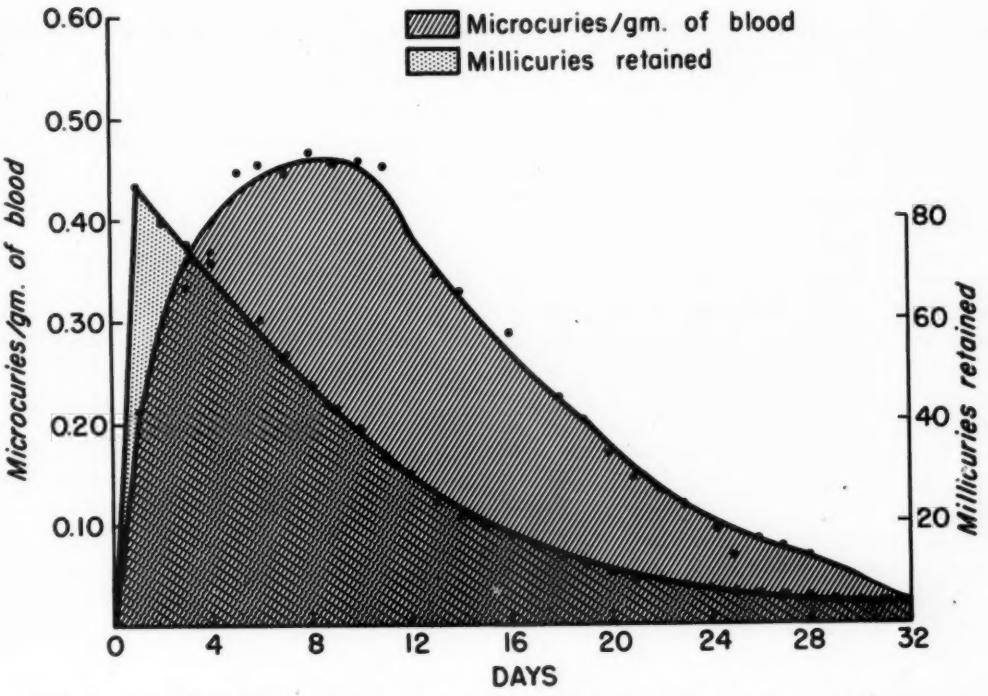


Fig. 3. The relative concentration of I^{-131} in the tumor and in the blood in the same patient as in Figure 2 except for change in decay rate of isotope (13 day, half life).

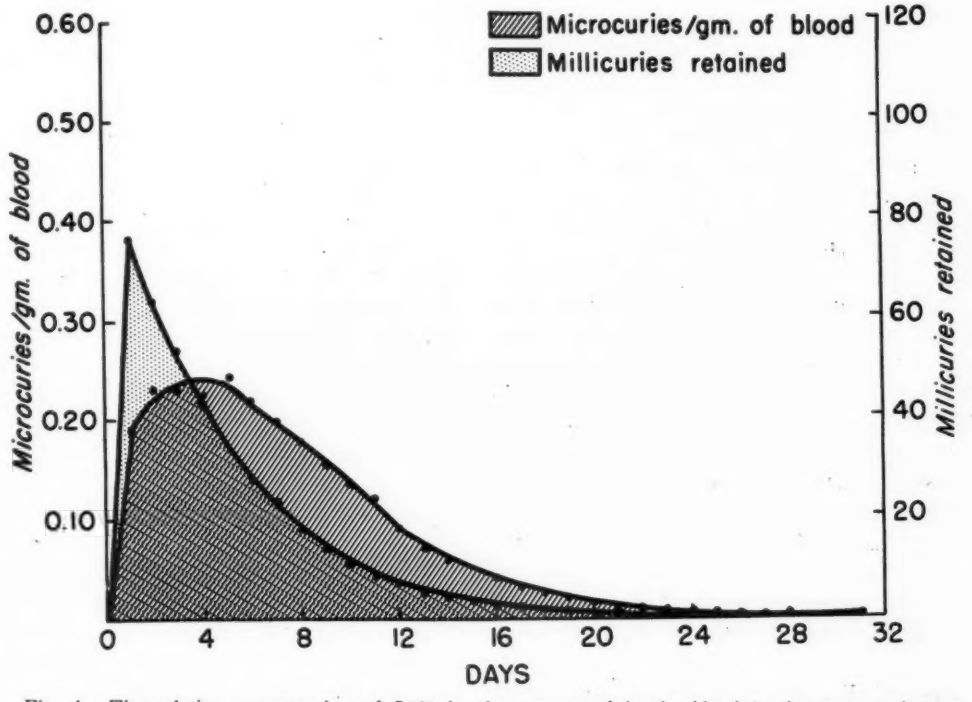


Fig. 4. The relative concentration of I^{-131} in the tumor and in the blood in the same patient as in Figure 2 except for change in decay rate of isotope (4 day, half life).

tient? Radiologists tell us that generally, one millicurie of radioiodine delivers about one roentgen of general body radiation and we know that the lethal dose of such radiation for man is approximately 400 r. Unfortunately we have seen several patients in whom this convenient rule failed completely. Since damage to the hematopoietic system is the most serious complication of treatment with I^{-131}, we have tried to correlate one of the more sensitive indicators of hematologic activity, depression of the level of circulating lymphocytes, with the millicuries of radioiodine administered. This results in rather inconsistent and erratic correlation. If one, however, really attempts to calculate the radiation to the blood-forming organs by using the integrated blood level of radioiodine plus a relatively small factor which takes into account the gamma radiation from iodine concentrated in the tumor, a quite satisfactory correspondence between cause (radiation) and effect (lymphocyte depression) is found. We cannot only measure the blood level of radioiodine and with somewhat less accuracy, the tumor retention of the isotope, but we can, from prior tracer study, predict these values for any given therapeutic dose. Patients with functioning carcinoma of the thyroid show a great variation in the way in which they metabolize iodine, so we find that the maximal safe dose of iodine 131 will vary for any single dose from 100 millicuries to 400 millicuries. The main reason for this difference is that some patients turn over iodine in the tumors so rapidly that the level of organic iodine in the blood rises to very high values. This organic radioiodine in the blood disappears rather slowly and meanwhile radiates the hematopoietic organs. Other patients discharge the organic iodine from the tumors into the blood stream quite slowly and the level of radioactivity in the blood is so low that a much larger dose may be tolerated.

The relationship between blood level and tumor level of isotope is complex and the precise relationship between the two will be changed by the decay rate of the isotope used. It is obvious that the most therapeutically promising situation is obtained when the area under the curve of blood level is the lowest and the area under the curve of tumor retention of isotope is the highest. Figure 2 shows these data for an actual patient with carcinoma of the thyroid and pulmonary metastases who picked up about 80 per cent of the 107 millicure therapeutic dose of I^{-131} which he was given. Figure 3 shows the relative areas under these curves if the patient had been given I^{-123} with a half-life of thirteen days and Figure 4 shows the same curves decayed with a physical half-time of four days which corresponds to the half-time of I^{-124}.

It is apparent that in this particular case the blood would have received slightly less radiation with respect to the tumor had the patient been given iodine 124. Similar calculations, assuming a twelve-hour half-life for iodine (iodine 130) suggest that the tumor dose would be very small and the blood dose quite high. There is, therefore, for each patient a particular decay rate of isotope which will result in the maximum tumor and the minimum blood radiation.

None of these calculations have taken into account the various energies of the beta rays and gamma rays emitted by these isotopes. These variations in energy will also produce changes in the blood/tumor radiation ratio. Furthermore, these calculations assume that differing rates of radiation do not affect physiologic processes involved. We know that therapeutic radiation very seriously affects iodine metabolism. If the radiation is of sufficient intensity, the release of thyroglobulin will drastically increase the blood level of radioiodine.[12]

These problems in such a relatively simple situation as radioiodine treatment of cancer of the thyroid are now, at least in part, understood but are by no means solved. The very complexity of this situation, however, points to the serious difficulties in the use of other radioisotopes from a therapeutic standpoint. Nevertheless, from the extensive experience with the use of iodine 131 for the treatment of cancer of the thyroid, the quantitative aspects of metabolism which must be met by an internally administered radioisotope for which a therapeutic effect is desired, have been delimited.

Summary

The advantages and the problems inherent in the use of radioisotopes have been described. The adaptation of radioisotopes to conventional radiotherapy is proceeding rapidly and will probably be the most useful field for radioisotope therapy. The possible use of radioisotopes for

selective destruction by localization in tumors has been discussed. The use of radioiodine in the treatment of cancer of the thyroid as a prototype for such a situation has been reviewed and the serious problems inherent in such a procedure have been mentioned.

References

1. Copher, H. G.; Wallingford, H. V.; Scott, G. W.; Zedler, G. G.; Hayward, Boyd; Moore, S.: Direct irradiation of carcinoma of the liver and biliary tract by the use of radioactive iodine (I^{-131}) in tetraiodophenolphthalein. Amer. J. Roentgenol., 67, 6:964-73 (June) 1952.
2. Dixon, W. R.; Garrett, C., and Morrison, A.: 1000 Curie Cobalt Units for radiation therapy IV. Radiation measurements with the Eldorado Cobalt 60 teletherapy unit. Brit. J. Radiol., 25:314-18 (June) 1952.
3. Flocks, R. H.; Kerr, H. D.; Elkins, H. B., and Culp, D.: Treatment of carcinoma of the prostate by interstitial radiation with radioactive gold (Au 198). A preliminary report. J. Urol., 68:510-22 (Aug.) 1952.
4. Freundlich, H. F., and Haybittle, J. G.: An improved iridium -192 teletherapy unit. Acta Radiol., 29:231-41 (Mar.) 1953.
5. Hahn, P. F., and Carothers, E. L.: The use of radioactive colloidal metallic gold in the treatment of malignancies. Nucleonics, 6:54-62 (Jan.) 1950.
6. Hahn, P. F.; Goodell, J. P. B.; Sheppard, C. W.; Cannon, R. O., and Francis, H. C.: Direct infiltration or radioactive isotopes as a means of delivering ionizing radiation to discrete tissues. J. Lab. & Clin. Med., 32:1442-53 (Dec.) 1947.
7. Javid, Manucher; Brownell, L. Gordon, and Sweet, H. William: The possible use of neutron-capturing isotopes such as Boron 10 in the treatment of neoplasms. II. Computation of the radiation energies and estimates of effects in normal and neoplastic brain. J. Clin. Investigation, 31, 6:604-11 (June) 1952.
8. Pressman, David: The zone of localization of antitissue antibodies as determined by the use of radioactive tracers. J. Allergy, 22, 5:387-96 (Sept.) 1951.
9. Mueller, J. H.: Zur medizinisch-therapeutischen Verwendung der kuenstlichen Radioaktivitaet. Bull. schweiz. Akad. d. med. Wissensch., 5:484-510, 1949.
10. Rall, J. E.; Foster, C. G.; Robbins, J.; Lazerson, R.; Farr, L. E., and Rawson, R. W.: Dosimetric considerations in determining hematopoietic damage from radioactive iodine. Am. J. Roentgenology, Radium Therapy and Nuclear Medicine. In Press.
11. Rall, J. E.; Miller, N. Wade; Foster, C. G.; Peacock, C. W., and Rawson, R. W.: The use of thiouracil in the treatment of metastatic carcinoma of the thyroid with radioiodine. J. Clin. Endocrinol., 11, 11:1273-80 (Nov.) 1951.
12. Robbins, J.; Rall, J. E.; Becker, D. V., and Rawson, R. W.: The nature of serum iodine after large doses of I^{-131}. J. Clin. Endocrinol. and Metabolism, 12, 7:856-74 (July) 1952.
13. Steinfield, Winton: Potential therapeutic use of short-lived radioactive isotopes, as chlorine –38, krypton –87. Federation Proc., 12:403, 1953.
14. Walton, R. J.: Therapeutic uses of radioactive isotopes in the Royal Cancer Hospital. Brit. J. Radiol., 23: 273:559-66.

SUBCUTANEOUS CLYSIS FOUND USEFUL IN TERRAMYCIN THERAPY

Administration of terramycin by subcutaneous clysis in infants and children, a previously unreported mode of antibiotic therapy, has been described by Farley and Konieczny† of St. Michael's Hospital, Newark, N. J. Use of the antibiotic in this fashion was considered a worthwhile therapeutic adjunct in children in whom oral or intravenous administration is contraindicated or not feasible.

Thirty-six patients from three days to four years of age received a total of 254 clyses with the intravenous form of the antibiotic. Most children were given 10 mg. per Kg. of body weight every twelve hours in a 1 mg. per cc. concentration. This concentration was considered an adequate dose offering a "wide margin of local toleration and safety." Concentrations above 5 mg. per cc. were not advised. All clyses, the authors report, were well tolerated and no untoward local or systemic reactions were observed.

Terramycin was found to be stable and compatitble in physiological saline, dilute dextrose solution or 1/6 M sodium lactate and Darrow's solution, and may be added to these solutions when they are needed for electrolyte repair.

The authors recommend a terramycin concentration of 1 mg. per cc. with a dosage of 10 mg. per Kg. of body weight every twelve hours. In more serious conditions: 20 to 25 mg. every eight to twelve hours.—Abstracted in *Currents in Infant Care,* May, 1953.

†Farley, W. J., and Konieczny, L.: J. Pediat., 42:177 (February) 1953.

DIAGNOSIS AND TREATMENT OF POSTPOLIOMYELITIC CONTRACTURES

MARCEL H. VANDEMOORTELE, M.D., and PAUL R. LIPSCOMB, M.D.
Rochester, Minnesota

THE diagnosis and treatment of the disease, anterior poliomyelitis, has undergone a significant evolution in the last twenty years. Early diagnosis, hospitalization, and subsequent early treatment have eliminated a great number of postpoliomyelitic complications. A fixed contracture means a deformity which, once present, cannot be corrected by conservative measures. Surgery then offers the only means of treatment. It is, therefore, of the greatest importance that in the early care of patients who experience this infection, treatment should be directed against the development of deformities. Prevention of postpoliomyelitic contractures is still one of the most important goals in the treatment of poliomyelitis.

Prevention of Contractures in the First Two Stages

Acute and Recovery Stage.—In the early treatment, rest in bed is indicated. The mattress should be firm, with boards between it and the springs. A correctly used foot board will maintain dorsiflexion of the feet and prevent shortening of the gastrocnemius and soleus muscles.[1,9]

Eventually it may be advisable to use sand bags, pillow supports, rolled towels, splints or plaster shells[13] to support and maintain the physiologic position of the muscles of the lower extremity. Tightness or spasm of the back and hamstring muscles is frequently encountered. Treatment with heat is advocated. Later on, muscle re-education and exercises should be instituted to relieve contracture or shortening of the muscles until a normal range of motion has been restored. This restoration of length of shortened or spastic muscles is essential regardless of whether or not there is demonstrable paralysis. Passive or active movements should never be carried to the point of producing pain. The aim must be to help the patient's ultimate recovery by maintaining the muscles, bones and joints in as good physiologic condition as possible.[12]

Convalescent Stage.—As soon as the patient is allowed to be up, braces are often required as temporary aids in the recovery of weakened muscles. Not only must the weakened, paralytic muscles have protection against overstretching and overwork, but the strong and often unopposed normal muscles must be supervised to prevent contractures and distortions occasioned by imbalance. This is especially true in the involved lower extremities, and braces used as supports to allow earlier ambulation must be constructed in such a way as to prevent deformities.[11,14] As a matter of fact, it is often difficult and sometimes impossible to control the development of contractures, especially at the level of the hip, foot and ankle joints.

The four most common deformities which may occur alone or in combination during the convalescent period at the level of the foot and ankle are the equinus, calcaneus, valgus, and varus deformities. The tendency to an equinus deformity can be controlled by the use of an ankle brace consisting of two irons hinged at the ankle with a posterior catch to prevent foot drop. A similar brace with an anterior catch will prevent calcaneus gait. Lateral motion in the foot may be controlled by a single or double iron with a broad T-strap fastened to the side of the shoe and strapped to the opposite heel bar. Generally a single iron will be sufficient. In other cases with marked lateral instability, a double iron may be required. A valgus foot needs an inside T-strap and a varus foot an outside T-strap.

Contractures of the upper extremity are rare. Only 30 per cent of the poliomyelitic patients who have paralysis show evidence of involvement of the upper extremity. Moreover, paralysis of the deltoid muscle is common among the lesions of the upper extremity[2] and results generally in a flail shoulder. Occasionally an adduction deformity of the shoulder may occur, and use of an airplane abduction splint is then indicated. Most of the time, however, the latter support will be need-

From the Section of Orthopedic Surgery, Mayo Clinic, Rochester, Minnesota.
Dr. Vandemoortele C.R.B., is a Fellow in Orthopedic Surgery, Mayo Foundation, and an Honorary Graduate Fellow of the Belgian American Educational Foundation, Incorporated.

ed in preventing over-stretching and over-fatigue of weakened or partially paralyzed muscles. An opponens splint may be very helpful in preventing an adduction deformity of the thumb.

In brief, then, it may be said that the patient should have no appreciable deformities if he has had efficient treatment in the first two stages of the disease.

Efficient prevention cannot be achieved if the extent of the disease and the degree of muscle damage have not been recorded. Ghormley emphasizes the importance of giving every patient with poliomyelitis a muscle test as early as possible during the convalescence in order that the possible development of deformities may be detected. However, some contractures which are due to shortening of muscles and fascia and sometimes to strong-muscle imbalance are inevitable, and they become more evident and more severe after the patient has become ambulatory.[5,7,8]

Treatment of Contractures in the Residual Stage

The four more common deformities which will be mentioned are contractures of the forearm, hip, knee and foot.

Forearm.—A severely fixed supination deformity is best corrected by osteotomy of the radius in its midportion.

More frequently, a pronation deformity of the forearm will necessitate an operation. If the pronator teres muscle is sufficiently active, transplantation of this tendon to replace the function of the paralyzed supinators, the procedure advocated by Tubby, is used.[4]

Flexion Contractures of the Hip.—In the lower extremity, the contractures around the hip joint are the cause of numerous deformities. Several forms of treatment for extra-articular contractures of the hip have been described in the past but none has been fully successful. Soutter in 1914 published his method of correction of flexion contractures of the hip, which consisted of stripping the flexor muscles subperiosteally from their original position. This treatment was based upon the concept that these contractures were the result of contraction of the tensor fasciae latae and the iliopsoas and rectus femoris muscles. While the immediate result of the operation was often satisfactory, there were a great number of recurrences.

In 1923 Campbell advised a modification of the Soutter operation. His procedure, called transference of the iliac crest, consisted of transference of the anterior superior spine and the anterior portion of the crest together with their attached muscles to a lower level. However, as Yount observed in 1926, "no case having a flexion contracture of the hip has been observed in which there was not also a flexion contracture of the knee joint together with some lateral distortion." It was obvious that the cause of the flexion contracture of the hip was also the cause of the flexion contracture of the knee.

Deforming Factors of the Contracted Iliotibial Band.—As a result of several observations, Yount stressed the importance of the iliotibial band as the main deforming factor. This fact has been given little attention in the past twenty-five years. Yount advised transverse fasciotomy of the iliotibial band above the patella. In 1928 Forbes wrote on the same subject. It was only in 1948 that Irwin emphasized again the tremendous number of deformities occurring in the lower part of the trunk and the lower extremities as the result of an almost insignificant contracture of the iliotibial band.

Pathogenesis.—The deformities around the hip joint are caused not so much by contractures of the muscle tissues as by shortening or contracture of the intermuscular septa and fascial envelopes. Irwin pointed out "that this fact can be easily demonstrated by dividing the contracted fascia covering the normal muscle tissue and after the cut edges of the fascia retract an inch or more, the (normal) underlying muscle tissue can be picked up with a tissue forceps in a relaxed condition whereas the muscle was tight prior to section of the band."[10] However, as Ghormley pointed out, "If for some reason muscle exercises have been neglected and the (normal) muscles have been at rest or if the member has been in a cast, the smooth surface and the normal glistening appearance of the normal muscle belly may be gone. Adhesions may form between the muscle and its fascial sheath, so that movement is limited." Moreover, muscles that are partially involved can become shortened be-

cause of contracture of the involved connective tissue surrounding the normal fibers. This is a kind of vicious circle and it explains, in part at least, why these deformities occur in flail extremities and why, when unilateral, they involve the extremity with the greater weakness. As a result of the connections of the short fascia and fibrosed muscle tissue, extending from the crest of the ilium distally to the head of the fibula, it is easy to understand how this short fibrous mass can produce as much deformity distally about the knee as it can proximally around the hip.

Pathomechanics.—The anatomic location of the iliotibial band in a plane anterior and lateral to the axis of the hip, and lateral and posterior to the axis of the knee, explains the mechanics of the production of contractures.

At the level of the hip joint a shortening of the iliotibial band gives rise to a flexion and abduction deformity of the hip. External rotation is the position of comfort and if this position is allowed to remain, the hip rotators will contract secondarily.

At the level of the knee, the iliotibial band acts as a taut bowstring across the joint. Through the opposing influences of fascial shortening and bone growth, the tibia becomes flexed and abducted on the femur, producing genu valgum and flexion contracture of the knee. Furthermore, in the presence of a strong short head of the biceps, the lateral attachment of the iliotibial band rotates the tibia and fibula externally on the femur. The extreme deformity consists in a subluxation of the tibial condyles on the external condylé of the femur, with the head of the fibula lying in the popliteal space.

With the patient standing and the contracted extremity in weight-bearing position, the pelvis tends to become oblique, causing a secondary scoliosis. Correction of the flexion deformity of the hip with the patient upright tilts the pelvis forward, increasing the lumbar lordosis.

Patients who attempt to walk may show a secondary equinovarus position of the foot as a compensatory result of shortening and external torsion of the leg. There is discrepancy in length of the two extremities, and there is external torsion of the femur.

Treatment.—Early recognition and prevention of shortening of fascia and muscles constitute the best treatment against the development of deformities around the hip joint. On the other hand, once the contracture of the iliotibial band is present, conservative measures such as attempts at correction by traction or extension will only increase the obliquity and hyperextension of the pelvis regardless of the age of the patient or the duration of the deformity (Irwin).[10] Surgical treatment is then indicated and consists in division of the iliotibial band together with the lateral intermuscular septum. In long-standing flexion-abduction contractures of the hip, the division of the iliotibial band must be supplemented by a Soutter fasciotomy. Postoperative treatment consists of use of a double spica cast with increased correction by wedging or traction.

Knee.—The two main deformities seen in the knee joint are bent back knee (genu recurvatum) and flexion contracture. The latter is more frequently seen because of the fact that the quadriceps muscle is most likely to be involved by poliomyelitis. Flexion of the knee is caused by shortening of the iliotibial band and by overaction of the hamstring muscles. This may result in thickening and shortening of the posterior capsule of the knee joint. If the knee cannot be extended by conservative means, division of the iliotibial band and the intermuscular septum and posterior capsulotomy as suggested by Wilson may be necessary.[4]

Foot and Ankle.—If, in the early stages of the disease, prevention of deformities of the foot and ankle has been unsuccessful, or if the correction by conservative measures such as use of braces, irons or orthopedic shoes has been insufficient, surgical procedures may be indicated. The primary function of the lower extremity is locomotion and the chief requisite for locomotion is stability. It is, therefore, essential to consider stabilization of the foot as the most important step in the treatment of a weak or paralyzed foot which is essentially unstable. Tendon transference has its place, but it is usually an adjunct to the stabilization operation. The operation which has proved to be of the greatest benefit is that form of stabilization which is called triple arthrodesis (fusion of the talonavicular, calcaneocuboid and subastragalar joints). This operation insures lateral stability and corrects different deformities of the foot. The amount

of bone removed from the various midtarsal joints is dependent on the kind and grade of deformity.

After triple arthrodesis, plantar motion and dorsiflexion of the ankle joint are still possible. If there is also foot drop, some modification is necessary in order to limit motion of the ankle joint (Lambrinudi).[4]

1. Clawtoe and Clawfoot.—A clawtoe deformity consists of hyperextension of the metatarsophalangeal joint and flexion of the interphalangeal joint. This clawtoe deformity is sometimes only apparent on dorsiflexion of the foot and ankle and is caused by overaction of the extensor or weakness of the flexor muscles. Clawtoe is very often a part of or associated with the cavus or clawfoot and is then secondary to the drop of the fore part of the foot. Correction of the clawfoot should be undertaken first, since the contracture of the toes may be relaxed when the longitudinal arch is restored to its normal height and the fore part of the foot is elevated. Correction of the clawtoes is obtained by lengthening of the extensor tendons and dorsal capsulotomy of the metatarsophalangeal joints. Since the short extensor to the great toe does not affect the interphalangeal joint, it is necessary to arthrodese this (interphalangeal) joint in the extended position.

In mild cavus, subcutaneous plantar fasciotomy may be sufficient, and for more pronounced deformities a Steindler stripping may be performed. If the correction of the cavus is still insufficient, anterior wedge osteotomy of the tarsal bones may be combined with the Steindler stripping technique. Another procedure in which the disproportion of muscle power may be equalized and which may prevent its recurrence is the Hibbs tendon transfer of the long extensors of the toe to the cuneiform bones (together with plantar fasciotomy).

2. Varus.—Evertor insufficiency caused by loss of power of the peroneal muscles results in a varus deformity. Transference of the tibialis anterior tendon into the cuboid bone is the operation of choice and, according to Campbell, perhaps one of the most uniformly successful of all tendon transferences in the region of the foot.

3. Valgus.—If the tibialis anterior muscle is paralyzed, the action of the peroneal muscles leads to abduction of the fore part of the foot, eversion of the heel and depression of the longitudinal arch. Tendon transference alone is rarely sufficient. To realign the fore part of the foot and restore the normal longitudinal arch, triple arthrodesis is often necessary.

4. Equinovarus.—If paralysis of the anterior tibialis muscle is associated with weakness or paralysis of the peroneal muscles and if the gastrocnemius and posterior tibialis muscles are normal, the foot will be pulled into an equinovarus deformity. Active dorsiflexion may be restored by forward transference of the posterior tibialis tendon.

5. Calcaneus.—Weakness or paralysis of the triceps surae or gastrocnemius may produce pes calcaneus. A simple method of correction of plantar flexion has been recommended by Bickel and Moe.[3]

After-treatment.—As a rule, the after-treatment of tendon transferences is as follows: The foot is held at a right angle and placed in a boot cast. If the operation has consisted of tendon transference alone, the cast is bivalved at the end of three to six weeks and physical therapy is started. At the end of six weeks, an ankle brace is fitted with a catch to prevent plantar or dorsal flexion. At night and between exercise periods, the back half of the bivalved cast or splint is worn to keep the foot at a right angle.

If tendon transference was associated with arthrodesis of the foot, muscle re-education and physical therapy are delayed for eight to twelve weeks.

References

1. American Orthopaedic Association: Infantile paralysis or acute poliomyelitis; a brief primer of the disease and its treatment. J.A.M.A., 131:1411-1419 (Aug. 24) 1946.
2. Bancroft, F. W., and Marble, H. C.: Surgical Treatment of the Motor-Skeletal System. Ed. 2, pt. 2, 1303 pp. Philadelphia: J. B. Lippincott Company, 1951.
3. Bickel, W. H., and Moe, J. H.: Translocation of the peroneus longus tendon for paralytic calcaneus deformity of the foot. Surg., Gynec. & Obst., 78: 627-630 (June) 1944.
4. Campbell, W. C.: Operative Orthopedics. Ed. 2, 2 vols., 1643 pp. St. Louis: The C. V. Mosby Company, 1949.
5. Elkins, E. C., and Wakim, K. G.: Recent trends in the management of poliomyelitis. Brit. J. Phys. Med., 10:163-167 (Nov.-Dec.) 1947.
6. Forbes, A. M.: The tensor fasciae femoris as a cause of deformity. J. Bone & Joint Surg., 26:579-584 (July-Sept.) 1928.

(Continued on Page 830)

CANCER OF THE TONGUE

ARNOLD J. KREMEN, M.D.
Minneapolis, Minnesota

CANCER of the tongue poses the most pressing therapeutic problem of all intraoral cancer. Although in terms of incidence it is not the most common cancer in the area, it causes more deaths than any other cancer of the head and neck. Reports of highly selected early cases of cancer of the tongue suggest cure rates as high as 56 per cent.[2,5] However, most clinics reporting their over-all results observe five-year survival rates in the area of 14 to 28 per cent.[1,3,6] Survival falls off even more precipitously in those cases with involved regional lymph nodes so that under these circumstances Gibbel, Cross, and Ariel[3] were able to report only a 4.6 per cent survival rate, and Sir Stafford Cade[2] a 9.2 per cent five-year survival.

Radiation, cautery excision or conventional surgical excision of the primary growth have all had their advocates. For permanent control of metastatic cancer to the regional cervical lymph nodes, however, there is broad agreement that radical neck dissection is the procedure of choice. For the most part these modes of therapy have been applied in a discontinuous fashion with attention being directed to the cervical glands only after the primary growth had been treated with reasonable assurance of permanent eradication. In 1948, I first attempted, and subsequently published,[4] a technique of surgical management of cancer of the tongue which applied classical concepts of cancer surgery to this lesion; namely, a primary combined en bloc resection of the tongue, floor of the mouth and cervical lymphatics. To date twenty-three patients have been operated upon by the technique described. This communication concerns itself with an investigation of the findings and subsequent course of these patients. It should be stressed that additional time is necessary before a final appraisal of the results can be arrived at. However, evaluation at this time seems appropriate to assess the achievement to date.

Presented before the Minneapolis Surgical Society, November 6, 1952.

From the Department of Surgery of the University of Minnesota and the University Surgical Service of Mount Sinai Hospital, Minneapolis, Minnesota.

Material

All cases of tongue cancer seen by the tumor clinic and staff at the University of Minnesota since June, 1948, that were deemed suitable for surgical care were operated in the fashion described. Criteria for operability were as follows:

1. That the lesion be confined to one-half of the tongue and/or floor of the mouth and did not grossly extend beyond the midline.
2. Lesions arising primarily in the base of the tongue were excluded since these are highly undifferentiated growths and are ordinarily quite radiosensitive. Moreover, satisfactory reconstructive techniques after sacrifice of the base of the tongue are not as yet available. However, resections as far posterior as the epiglottis have been carried out in this group of patients.
3. Clinical evidence of regional lymphatic involvement was not looked upon as a contraindication unless the nodes were massively enlarged, agglutinated and fixed.
4. Age in itself was no contraindication. Four of the patients were over seventy years of age.

Lymph Node Involvement

If cancer in any site is to be treated surgically it is desirable that a complete excision of the regional lymph draining area be effected at the time of definitive therapy if at all possible. This concept as applied to cancer of the tongue has been the subject of considerable debate. Martin and associates[5] have stated that over 60 per cent of unselected cases of cancer of the tongue metastasize at some time during the course of their disease. However, the same author noted in a highly selected group of cases of cancer of the tongue who had no demonstrable cervical metastases at the time of therapy and in whom the lesion remained permanently controlled, that only 22 per cent later exhibited metastatic cancer. On the other hand, Roux-Berger,[7] in 1949, reported a study on 173 patients with cancer of the tongue who had radical neck dissections when there was no clinical evidence of cervical gland envolvement. In this series he was able to dem-

onstrate metastatic cancer microscopically in eighty-one patients or 46 per cent of the group.

In the present study fifteen of the twenty-three patients had no clinical evidence of lymph gland involvement at the time of surgery. In six of these fifteen cases, or 40 per cent, it was possible to demonstrate metastatic lymph node involvement on routine microscopic study of the specimens. Since these specimens were not studied by a serial section technique, this 40 per cent is a base line figure and in actuality the incidence of metastases may be considerably higher. Saphir and Amromin,[8] in 1948, studied by serial section thirty cases whose axillary lymph nodes were removed by radical mastectomy and were reported as negative on routine pathologic study. By the enormous labor of serial section examination, they were able to demonstrate nests of cancer in the lymph nodes of ten specimens or 33 per cent of cases judged to be negative on routine sampling of the specimen. In the light of our experience with cancer of the tongue showing that at least 40 per cent of clinically negative cases have metastatic involvement, it would appear that radical lymph node dissection should be an integral part of any plan of treating cancer of the tongue surgically.

There were eight cases in this series where physical examination revealed enlarged palpable submaxillary or cervical lymph glands which were considered clinically to be involved with metastatic cancer. On microscopic examination of these specimens, five of eight cases, or 62 per cent, revealed cancer in the lymph nodes. This experience is similar to that of operable cancer of the breast when the axillary nodes are felt clinically to be involved.

Results

To date there have been five recurrences noted in the entire group of twenty-three patients who probably will, or already have, died of their disease. Only one of these recurrences has been in the oral cavity; the others have all been in the neck. All of these patients had positive lymph nodes.

Table I shows that the average number of months to the appearance of recurrence was ten months. However, this figure is overbalanced by the one case that went twenty-one months. Four of the five cases had evidence of recurrence by six months after the operation or earlier.

TABLE I.

Patient	Time Interval in Months from Surgery to Recurrence
B.F.	6
H.R.	6
E.E.	21
C.M.	5
F.W.	2

TABLE II.

No. of Cases	Month Since Surgery	Status
1	40	1 & w
1	32	1 & w
2	28	1 & w
3	24	1 & w
1	18	1 & w
1	12	1 & w
3	less than 12	1 & w
Total 12		

Of the entire group of twenty-three patients, seventeen, or 74 per cent, are living and free of demonstrable disease. Five developed recurrent disease and one died postoperatively of unexplained fever. Nineteen patients had been operated upon over a year prior to the period of evaluation. Of these, thirteen, or 68 per cent, are living and free of demonstrable recurrence.

In the eleven patients with histologically positive lymph nodes, six are dead or living with a recurrence (including one postoperative death). Five patients are alive and well forty-eight, thirty-three, eighteen, twelve and ten months from the time of their operation. Of the twelve with histologically negative lymph nodes, all are alive and free of recurrence. The number of patients living and well and the time from operation to their last evaluation are shown in Table II.

Discussion

The operation as described has been shown to yield acceptable cosmetic and functional results. There has been some difficulty with speech in the early postoperative period but after a period of adjustment these people have regained sufficient proficiency to be able to converse satisfactorily. Most of those that had been gainfully employed were able to return to their previous duties. Similarly the ability to eat and swallow poses a problem in the early postoperative period. However, with time they have been able to take enough by mouth to satisfy both their nutritional requirements and their gustatory desires with minor restrictions.

Transection of the mandible, to provide the exposure necessary to do an adequate incontinuity operation has not posed any problem. Accurate coaptation of the severed mandible with stainless steel wires placed through drill holes, leads to prompt healing of the bone with preservation of the mandibular arch. This technique is designed for management of cancer of the tongue where involvement of the mandible is not a consideration. If one suspects that the mandible is invaded by the tumor, the bone should be sacrificed without question and removed en bloc with the rest of the specimen. However, in the usual case of cancer of the tongue, the lesion is well away from the mandible and its sacrifice is unnecessary and unjustified. It is transected and retracted to provide exposure and permit an en bloc excision of the primary lesion and the cervical lymphatics and then is returned and fixed in position to preserve the contour of the face.

Summary and Conclusions

1. Twenty-three patients have been operated upon for cancer of the tongue in the fashion described. There was one postoperative death.

2. Of the entire group of twenty-three cases, seventeen, or 74 per cent, are alive and well. Of nineteen cases treated from one to four years ago thirteen, or 68 per cent, are alive and free of recurrence.

3. From this preliminary appraisal of results, which is too early for final conclusions, the results appear encouraging and strongly justify continuation of the study.

References

1. Bervin, Elis: End results of treatment of cancer of the tongue. Am. J. Roentgenol., 63:712, 1950.
2. Cade, Sir Stafford: Treatment of cancer of the tongue. Am. J. Roentgenol., 63:716, 1950.
3. Gibbel, M. L.; Cross, J. H., and Ariel, I. M.: Cancer of the tongue. Cancer, 2:411, 1949.
4. Kremen, A. J.: Cancer of the tongue; a surgical technique for a primary combined en bloc resection of tongue, floor of the mouth and cervical lymphatics. Surgery, 30:227, 1951.
5. Martin, H. E.; Munster, H., and Sugerbaker, E. D.: Cancer of the tongue. Arch. Surg., 41:888, 1940.
6. Peterson, D., and Stenstrom, K. W.: Carcinoma of the tongue. Staff Bull., U. of Minn. Hosp., 14:15, 1948.
7. Roux-Berger, J. L.; Baud, M., and Courtial, J.: Cancer de la partie mobile de la langue. La curage ganglionaire prophylactique est-il justifie? Stastique de la Foundation Curie. Me'm Acad. de chir., 75: 120, 1949.
8. Saphir, O., and Amromin, G. D.: Obscure axillary lymph node metastases in carcinoma of the breast. Cancer, 1:238, 1948.

DIAGNOSIS AND TREATMENT OF POLIOMYELITIC CONTRACTURES

(Continued from Page 827)

7. Ghormley, R. K.: History of Treatment of Poliomyelitis. In American Academy of Orthopaedic Surgeons: Lectures on Regional Orthopaedic Surgery and Fundamental Orthopaedic Problems; Selected from the Instructional Courses of the Thirteenth Annual Assembly, Chicago, January 19-23, 1946, pp. 151-160. Ann Arbor, Michigan: J. E. Edwards, 1947.
8. Green, W. J.: The Treatment of Infantile Paralysis. In American Academy of Orthopaedic Surgeons: Lectures on Regional Orthopaedic Surgery and Fundamental Orthopaedic Problems: Selected from the Instructional Courses of the Thirteenth Annual Assembly, Chicago, January 19-23, 1946; Ann Arbor, Michigan, J. E. Edwards, pp. 161-166, 1947.
9. International Poliomyelitis Congress: Poliomyelitis; Papers and Discussions Presented at the First International Poliomyelitis Conference. 360 pp. Philadelphia: J. B. Lippincott Company, 1949.
10. Irwin: Personal communication to the authors.
11. Jones, Robert, and Lovett, R. W.: Orthopedic Surgery. Ed. 2, 807 pp. New York: William Wood and Company, 1929.
12. Lenhard, R. E.: Prognosis in poliomyelitis. J. Bone & Joint Surg., 32A:71-79 (Jan.) 1950.
13. McCarrol, H. R., and Grego, C. H., Jr.: An evaluation of physiotherapy in the early treatment of anterior poliomyelitis. J. Bone & Joint Surg., 23:851-861 (Oct.) 1941.
14. Mercer, W.: Orthopaedic Surgery. Ed. 4. 1016 pp. Baltimore: Williams & Wilkins Company, 1950.
15. Yount, C. C.: The role of the tensor fasciae femoris in certain deformities of the lower extremities. J. Bone & Joint Surg., 24:171-192 (Jan.-Mar.) 1926.

SOLITARY NONPARASITIC CYSTS OF THE LIVER

DAVID GAVISER, M.D.

Minneapolis, Minnesota

SOLITARY nonparasitic cysts of the liver are rarely encountered, but are not uncommon. Up to the present time 196 cases of solitary nonparasitic cysts of the liver have been reported. In 1929, Stoesser and Wangensteen[12] reported the presence of 102 recorded cases in the literature, and added two cases of their own. In 1937, Davis[7] presented an extensive study of nonparasitic cysts of the liver and reported the existence of 187 recorded cases in the literature, to which he added an additional case. Ochsner[11] reported a case in the same year. Jennings and Attix[2] each reported an additional case in 1939, and Montgomery[9] added two cases to the existing number in 1940. Monroe[10] reported a case in 1942. Caravati[5] added a case in 1950, and Abolfathi,[1] added another case in 1951, bringing the total to 196. At this time, I am reporting a patient who came under my care, and through the courtesy of Drs. O. H. Wangensteen and F. John Lewis, I have the privilege of reporting two additional patients who were operated upon at the University Hospital. In only three previously reported cases has a correct preoperative diagnosis been made.

Case 1.—The patient, a fifty-one-year-old white woman, was admitted to the hospital on October 3, 1952, with the history that five days prior to admission she had developed a pain in her lower abdomen. On the following morning the pain shifted to the right upper abdomen and remained there. The pain was quite severe and aggravated by breathing and movement. There were no other associated symptoms. The patient had no chills or fever. The aching pain in the right upper quadrant of the upper abdomen persisted without any appreciable change. On the morning of her admission there was some diminution in the severity of her pain.

In May of 1952, the patient had felt tired and generally run down and consulted her private physician who found what appeared to be an enlarged liver. Colon study, gall-bladder study as well as gastrointestinal x-ray were done at that time and were reported as normal. The liver was reported as being enlarged.

Physical examination at the time of admission revealed marked tenderness in the right upper quadrant with muscle spasm and rigidity. There appeared to be a tender mass lateral to the midline on the right side below the costal margin and about 4 cm. from the midline. The mass appeared to be about 2 cm. in diameter and felt as though it was within the abdominal cavity. The liver appeared to be greatly enlarged extending down to the umbilicus and across to the left costal margin. The surface of the liver felt smooth and the edges sharp and firm. The liver itself did not appear to be tender. The spleen was questionably enlarged below the costal margin. The patient was seen in consultation by an internist, and it was the clinical impression that a cirrhosis could possibly account for the hepatomegaly and splenomegaly. The possibility of a metastatic lesion to the liver had to be considered since there was a mole on the dorsum of the left hand. (The lesion on the left hand was biopsied and proved to be a benign blue nevus.)

X-ray examination on admission: chest, right diaphragm enlarged; heart and lungs, normal (Fig. 1.) Flat and upright plates of the abdomen showed the right upper quadrant occupied by a large mass which was confluent with the liver or could be a markedly enlarged liver (Fig. 2.) This displaced the hepatic flexure downward. An intravenous pyelogram showed the right kidney displaced downward and rotated. There was no intrinsic lesion within the kidneys (Fig. 3.) X-ray following a barium enema showed the hepatic flexure of the colon displaced medially and anteriorly (Fig. 4a.) Gastrointestinal study showed displacement of the second portion of the duodenum (Fig. 4b.) could indicate that the mass in the abdomen was partially retroperitoneal so as to displace both the kidney and the duodenum.

Due to the presumptive diagnosis of cirrhosis of the liver, the internist felt that a liver biopsy should be done. There was some difference of opinion on this, because it was felt that a liver biopsy would not provide any more information than an exploration, which was contemplated in a few days. However, on the insistence of the internist, the biopsy was attemped in the anterior axillary line below the costal margin. On insertion of the needle, clear fluid was returned through the needle. A total of 600 cc. of clear fluid was obtained. This established the presumptive diagnosis of a solitary nonparasitic cyst of the liver. Examination of the fluid obtained revealed: specific gravity, 1.011; 18 erythrocytes (this was considered due to the puncture), and no leukocytes. There was 1 gram per liter of protein according to the Esbach method. There were no parasites or amebae found. No echinococci were found. On routine culture for bacteria and fungi, no growth was reported after four days. Amylase activity was 0.

Operative Report.—The abdomen was entered through a long right paramedian incision which extended from the xiphoid process to just below the umbilicus. The anterior rectus sheath was incised in the same direction and the rectus muscle was dissected from the sheath and

---

Inaugural Thesis presented before the Minneapolis Surgical Society, November 6, 1952.

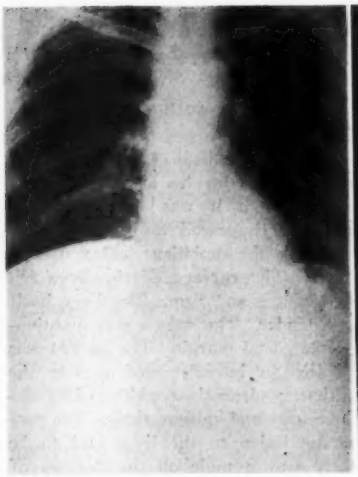


Fig. 1. The right diaphragm is elevated and flatened, especially in the medical portion. There was delayed and decreased motion on flouroscopy.

Fig. 2. A large mass in the right upper quadrant and displacement of the hepatic flexure of the colon.
A. Flat plate of the abdomen. B. Upright plate of the abdomen.

Fig. 3. Intravenous pyelogram: downward displacement of the right kidney and medial rotation of the superior pole.

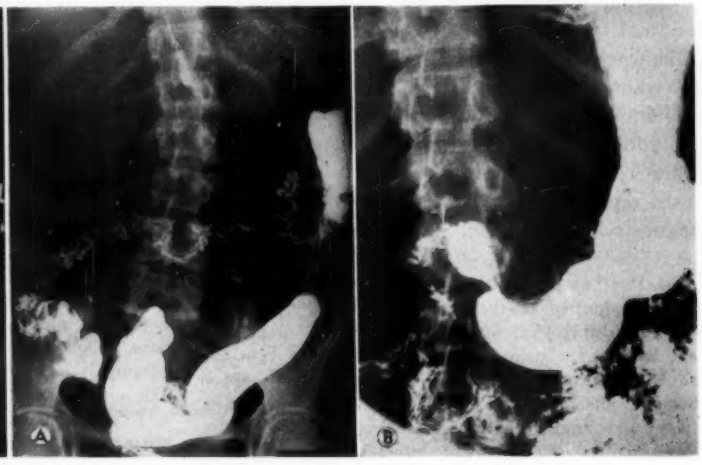


Fig. 4. Barium enema x-ray.
A. Depression of the hepatic flexure of the colon by the enlarged mass in the right upper quadrant. B. Displacement of the second portion of the duodenum.

retracted laterally. The posterior rectus sheath was incised vertically. There was a small mass of infarcted fatty omentum attached to the round ligament of the liver. This accounted for the tender mass in the right upper quadrant felt preoperatively and was possibly due to the displacement of the liver against the anterior abdominal wall. The liver was obviously enlarged. However, the cyst was not immediately visible. The palpation of the right lobe of the liver revealed the presence of the cyst high up under the costal margin. The liver was retracted downward and medially and a large cystic area which was confluent with the remaining surface of the liver was found occupying the superior, lateral, and posterior surface of the right lobe of the liver. The surface of the cyst was smooth, shiny and had a bluish appearance. Coursing within the wall of the cyst were many dilated veins. The site of the previous puncture of the cyst was a bare 0.5 cm. from the edge of the cyst. The exploration of the remainder of the abdomen revealed no abnormality. There were no cystic changes in the pancreas, kidneys, or spleen. It was obvious because of its position high under the costal margin that any attempt to marsupialize the cyst or drain it would be impossible. An

attempt was then made to establish a cleavage plane between the cyst wall and the surrounding liver. Because it appeared that this would be difficult, it was decided to empty the cyst of its contents. An incision was made into the cyst, 3 cm. from what appeared to be the cyst wall edge and the contents were aspirated. The fluid was clear and colorless. The inner surface of the cyst was finely trabeculated; 2,000 cc. of fluid were aspirated before the cyst completely collapsed. A good cleavage plane was then found between the liver and the cyst wall and it was possible by mainly blunt dissection to completely excise the cyst. As the dissection proceeded it was found that many large vessels were firmly attached to the outer cyst wall, and these required ligation. Upon completion of the dissection a large defect remained in the liver measuring approximately 16 cm. in diameter. It was possible to obliterate the major portion of the cavity by suturing the thinned out areas of liver surrounding the cyst into the defect, and then approximating the remainder of the liver to itself. A Penrose drain had previously been placed in the depths of this closure. A large Penrose drain was placed above the liver and both drains were brought out by separate stab wounds on the lateral side of the abdomen. The abdomen was then closed in layers. The patient withstood the operative procedure well and left the operating room in good condition.

The pathological report was "large simple cyst of the liver, congenital in origin."

The postoperative course was uneventful except for a persistent low grade fever for two weeks postoperatively.

Fig. 5. Gastrointestinal study: a mass pressing on the lesser curvature of the stomach.

Fig. 6. Colon study: a large oval mass in the abdomen and displacement of the transverse colon.

Case 2.—This forty-seven-year-old white woman was first studied in the Cancer Detection Center because of vague symptoms of upper abdominal distress consisting of gas pains, belching, and slight distention following eating, particularly of fatty and fried foods. On the basis of these findings a cholecystogram and upper gastrointestinal x-ray was done. The cholecystogram was normal. The upper gastrointestinal study, however, showed the presence of a smooth rounded symmetrical defect of the lesser curvature of the stomach and the duodenal bulb (Fig. 5.) This finding suggested pressure from an extrinsic mass. Because of its position and the symmetrical contour of the defect a pancreatic cyst was considered to be the most likely possibility. X-ray examination of the colon showed on the post-evacuation study that the transverse colon was displaced somewhat inferiorly (Fig. 6.) In addition, a large oval shaped mass could be made out in the upper mid-portion of the abdomen. This finding also suggested the presence of a large cyst of the pancreas.

Her past health had been good. In 1928, an appendectomy had been done, and in 1930, a subtotal thyroidectomy had been performed. Her systemic review was entirely negative except for the fatty food intolerance. Physical examination revealed only the presence of fullness in the upper abdomen which was interpreted as the mass in the upper abdomen seen on x-ray. A preoperative diagnosis of pancreatic cyst was made. Due to the obesity of the patient she was placed on a reduction diet prior to the operation.

On July 3, 1950, the patient was operated upon. Through a midline upper abdominal incision and sternal

Fig. 7. Colon study: depression of the transverse colon with deflection of the lower sigmoid to the left.

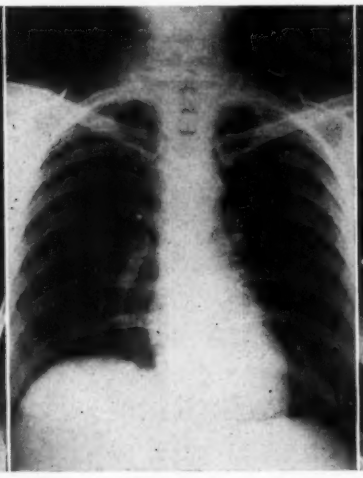


Fig. 8. Chest x-ray shows elevation of the right diaphragm.

Fig. 9. X-ray of the kidneys shows downward displacement of the right kidney.

splitting incision, the abdomen was entered. It became apparent that there was a large cyst of the left lobe of the liver, largely replacing this portion of the liver. The cyst was then opened and its fluid contents aspirated. Most of the cyst wall right down to the liver edge was then excised. Because of the possibility that this might be a choledochal cyst, the common bile duct was opened and explored to see if there was any communication between the common bile duct and the cyst itself. The common bile duct did not enter the cyst, nor was there any connection with the bile duct itself. Some bile oozed out from the liver edge. In order to circumvent a bile peritonitis, catheters were placed within the defect produced by the excision of the cyst and the defect was closed by coaptation of the liver edges. Penrose drains were also placed within this area, down into the liver substance, and the catheters and Penrose drains were brought out through a stab wound in the abdominal wall. A T-tube was left in the common duct and brought out through a separate stab wound. The sternal incision was closed with stainless steel wires and the abdominal wall with interrupted silk.

On the following day the patient appeared to be quite dyspneic. X-ray examination revealed the presence of a pneumothorax on the right. There was subcutaneous emphysema over the right side of the chest and the anterior surface of the neck. Thoracentesis was done through the right third inter-space anteriorly and 700 cc. of air was removed.

The patient improved clinically after the aspiration of the chest. X-ray showed full expansion of the right lung. The T-tube and the drains were removed by the fourteenth postoperative day and the patient was discharged on the following day. The aspirated fluid was not subjected to analysis. The patient was last seen on August 14, 1951, and then had no subjective complaints or abnormal objective findings.

Pathological report was "benign non-parasitic cyst of the liver."

Case 3.—This fifty-six-year-old white woman came to the Cancer Detection Clinic on July 5, 1951. During the course of the routine examination a mass in the pelvis was found. The patient was then referred to the gynecologic clinic, having previously been a patient at the University Hospital.

Her past health had been poor. She had had an appendectomy in 1921. She had suffered from a migraine type of headache and also complained of intermittent abdominal distress. She had suffered frequently from backache and lower quadrant distress. In 1950, an x-ray diagnosis of duodenal ulcer had been made. In 1926, the patient had had an episode of painless jaundice which was not diagnosed. She also complained of nocturia and urinary frequency. Her last menstrual period was in 1944, when x-ray sterilization had been done for abnormal menstrual bleeding. She had had no bleeding or discharge since that time.

Physical examination revealed tenderness in the right lower quadrant. On pelvic examination a firm mass about the size of an orange lay behind the uterus and could not be separated from the fundus. The mass extended into the cul de sac and was somewhat mobile. The right ovary appeared somewhat larger than normal; the left could not be separately felt. The clinical impression was the probable presence of a left ovarian tumor.

X-ray examination of the colon was done and this showed some deflection of the lower sigmoid to the left as by a pelvic mass (Fig. 7.) There was likewise downward displacement of the hepatic flexure of the colon and there was a suggestion of a mass present in the right upper quadrant. Chest x-ray showed the right hemidiaphragm somewhat elevated (Fig. 8.) An intravenous pyelogram showed that the right kidney

was lower than normal (Fig. 9.) The conclusions from the x-ray examinations were that the liver was enlarged, elevating the right diaphragm, and seemed to be depressing the right kidney somewhat. There was also a mass in the mid-line of the pelvis which displaced the left ureter laterally and depressed the superior aspect of the bladder.

On July 17, 1951, the patient was operated upon by the gynecologic service. Exploration of the abdomen revealed a large cyst of the right lobe of the liver. The remainder of the liver, the spleen, and kidneys were normal. Examination of the pelvis revealed the left ovary completely replaced by a large cystic mass. The right ovary was likewise involved. A hysterectomy was done for bilateral serous cystadenocarcinoma of the ovaries.

The patient was then treated postoperatively with x-ray therapy to the pelvis. Because the cyst of the liver appeared to be asymptomatic and because of the presence of the malignancy in the pelvis, nothing further was done to the cyst of the liver. The patient was followed in the surgical and gynecologic out-patient departments. During this period she began to complain of increasing right upper quadrant pain unrelated to meals. A cholecystogram and upper-gastrointestinal series showed no evidence of abnormalities.

Although it was not felt that the cyst of the liver was the cause of her distress, she was admitted and subjected to abdominal exploration on December 12, 1951, with the idea in mind of removing the cyst of the liver. Exploratory laporatomy revealed no evidence of recurrence in the pelvis of the serous cystadenocarcinoma. A large cyst occupying the major portion of the right lobe of the liver was found. A wall of the cyst was thin and translucent. The cyst was evacuated of 1700 cc. of clear colorless fluid. The cyst was unilocular and occupied the anterior surface of the right lobe of the liver and extended down to the right border of the gall bladder. The postoperative course was uneventful and the patient was discharged on her sixth postoperative day.

Pathological report was "benign cyst of the liver."

Discussion

Nonparasitic cysts of the liver occur either as single or multiple cysts. Multiple cysts occur in the liver alone, but are usually associated with cysts of the pancreas, kidney, spleen, lungs and brain. Monroe (Sonntag)[10] suggested that cystic disease and solitary cysts of the liver were but different variations of the same disease. No definite proof of this contention has been produced. Stoesser and Wangensteen[12] stated, "It is generally accepted that the solitary cyst in nonarteriosclerotic kidneys is but another expression of polycystic disease." A corresponding similarity would appear to extend to the manifestation of the disease in the liver. In several cases reported of solitary cysts of the liver, there have been small cysts in the proximity of the large cysts. This contention is a debatable one and in most reports the two conditions have been reported as separate entities. Monroe[10] feels that until more is known about the solitary cysts of the liver, these two conditions should be treated as separate entities. The incidence of the disease is higher in women and is roughly three to four times as frequent as in men. Solitary nonparasitic cysts of the liver have been observed at all ages. The oldest case was that of a man aged seventy-five years of age reported by Bland-Sutton.[3] The contention that these cysts are congenital in origin is substantiated by their occurrence in the new-born. Witzel[13] reported a case of a large liver cyst in the new-born which complicated labor. Other investigators have reported similar instances. The cysts are more commonly found in the anteroinferior portion of the right lobe of the liver. The quadrate lobe and the left lobe are sometimes involved and with less frequency the central portion of the liver. The size of the reported cysts and the amount of liver destruction present have varied considerably. Some of these cysts reported have been microscopic and others have filled the entire abdomen. Cousins[6] reported a cyst of the liver which contained 2.5 gallons of clear yellow fluid. The external surface of the cyst is usually smooth, shiny, and grayish-blue in color showing many dilated veins. The internal surface may be finely trabeculated. The thickness of the cyst wall is variable, being reported as varying from 0.5 mm. to 2 cm. in thickness. The microscopic appearance of the wall according to different authorities consists of three layers of connected tissue. An inner layer rich in cellular element, a circularly arranged dense layer poor in cell nuclei, and containing a few blood vessels with thickened intima, a loose outer layer with elastic fibers, muscle bundles rich in cells, many blood vessels, and bile ducts. The cyst is lined with cubical, cylindrical, or flat cells, but the epithelium is much desquamated. The bile ducts found in the wall of the cysts are usually lined with the same kind of epithelium which lines the cysts. The fluid contents of the cysts vary from a clear watery, sometimes yellow-brown fluid, having a specific gravity varying from 1.007 to 1.024, to a semi-solid material resembling an organized clot. The cyst fluid may contain albumen, mucin, cholesterol, blood and occasionally bile. Boyd[4] explained the presence of bile in

some cysts by stating that as the cyst increased in size, large bile ducts ruptured into the cysts, their walls being destroyed by pressure. The etiology of solitary nonparasitic cysts, however, is unknown. Monroe[10] quotes the classification of Sonntag as being the most generally accepted.

A. Blood and degenerated cysts
B. Dermoid cysts
C. Lymphatic cysts due to obstruction or to congenital dilation of the lymphatic
D. Endothelial cysts
E. Cysts due to bile duct obstruction
F. Proliferative cysts (cystadenoma)

No classification of nonparasitic cysts of the liver has yet been presented which has found general acceptance. This may be due to the fact that there is a discrepancy in regard to the pathological interpretations of the histological findings.

Clinical Findings

There are a few identifying symptoms or signs which would lead one to suspect the presence of these solitary cysts. This may be due to the fact that these cysts grow so slowly that the abdominal contents accommodate themselves to their presence. Many of the cases remain asymptomatic and are discovered incidental to the investigation of other suspected or actual intra-abdominal disease. Others may present themselves with painless abdominal swelling. Mild gastrointestinal symptoms such as nausea, occasional vomiting, and diarrhea have been reported. It appears that pain directly related to the cysts is an uncommon complaint. In those cases in which pressure from the cyst has resulted in extrahepatic obstruction, biliary tract symptoms and jaundice have been the presenting complaints. Very few of these solitary cysts of the liver have been recognized clinically, most having been mistaken for cysts of other abdominal organs, that is, ovarian cysts, mesenteric cysts, hydrops of the gall bladder, pancreatic and renal cysts. When symptoms were present they were due either to pressure, tortion of the pedicle or rupture of the cysts.

Most observers feel that diagnosis preoperatively is almost an impossibility. Abdominal swelling is probably the most frequent pathognomonic sign. The presence of a mass in the upper abdomen is extremely suggestive. The roentgenologist may be of considerable aid in the establishing of a diagnosis. Large tumors of the liver depress the hepatic flexure of the colon. With neoplasms of the kidney, the colon usually lies over this swelling. Intravenous pyelography may reveal the downward displacement of the kidney by an enlarged liver. Gastrointestinal study may show the displacement of the kidney to the left of and anteriorly to the duodenum as well as evidence of external pressure on the lesser curvature of the stomach. Ordinary chest x-ray may show elevation of the diaphragm if the liver is sufficiently enlarged.

Treatment

The only satisfactory treatment for solitary cysts of the liver in which relief is required is surgical intervention. Complete excision of the cyst should be attempted if feasible. Frequently this procedure cannot be done without jeopardizing the patient. Marsupialization or just simply drainage has been reported as producing very satisfactory results.

Summary

Three cases of solitary nonparasitic cysts of the liver have been presented. These cysts are obscure in their origin, appear to be congenital in nature, occur more frequently in women, seldom give rise to any symptoms except as they exert pressure on the adjacent organs. They occur more commonly in the anteroinferior portion of the right lobe of the liver and in this position x-ray findings of downward displacement of the right kidney and medial displacement of the duodenum may suggest the diagnosis. Large cysts of the left lobe may simulate a pancreatic cyst in the x-ray findings. The correct preoperative diagnosis is rarely made. Only three cases have been previously reported in which the correct preoperative diagnosis was made. The last reported case in the literature where a correct preoperative diagnosis was made was by Caravati when during the performance of a punch biopsy of the liver, the cystic cavity was entered. In the case which came under my care, a similar fortuitous circumstance occurred. Surgical treatment consists of removal of the cyst when the nature of the attachment permits, marsupialization, or simply drainage if excision is not feasible.

(Continued on Page 849)

THE USE OF THE KUNTSCHER NAIL FOR FRACTURES OF THE FEMORAL SHAFT

DANIEL J. MOOS, M.D.
Minneapolis, Minnesota

SURGEONS have been disappointed so often by the end results of new spectacular techniques that it is indeed refreshing to review a subject that leaves one more enthusiastic than seemed possible at the initiation of the method. In the fall of 1944, intramedullary nails used in the treatment of fractures in the femoral shaft first came to the author's attention. These nails had been used in Germany in Prisoner of War Camps and seemed to us at the time to represent a dangerous method of treatment which was perhaps dictated by the necessities and lack of facilities incident to wartime. The sharply ingrained dictum of adequate immobilization of fractures after any type of internal fixation tended to induce rejection of this concept which allowed free motion of the fractured extremity postoperatively with full weight bearing.

Precedents of the past, of course, amply supported a pessimistic attitude. The pendulum of popularity following Lane's description[5] of internal fixation had already swung back almost to the point of the method's disrepute when the introduction of electrolytically inert metals[6,8] plus realization of the necessity for co-existing external immobilization again revived the employment of an essentially sound technique. With the spectre of wasted muscles and stiffened joints which so often follow long-continued immobilization in plaster, reminding us constantly that normal active motion in a fractured extremity would be extremely desirable, further examination of Kuntscher's method[4] seemed to be indicated.

Hey Groves[3] in 1918 described intramedullary fixation of several complicated fractures in the femoral shaft by the insertion of massive metal nails into the medullary canal. For this purpose he devised tubular, cruciform and solid nails placed by a surgical technique quite similar to that employed today. His results were poor probably not through fault of the method or technique but rather in the selection of cases which were severe, badly infected compound wounds of war, which may well have proved refractory to any method of therapy. We hear no more of the method as applied to fractures in the femoral shaft until Kuntscher,[4] in 1940, described the use of a clover leaf shaped hollow metal rod inserted over a guide through the greater trochanter down the medullary canal of the proximal and distal femoral fracture fragments. His method necessitated prolonged fluoroscopy or multiple x-ray film control for closed reduction of the fracture and blind insertion of the nail. Bohler[1] of Vienna immediately adopted the technique and devoted a volume of his book to the use of intramedullary nailing not only in femoral fractures but in fractures of the other long bones. Prominent in the reports of Kuntscher[4] and Bohler[1] was the ever present fear of complicating infection associated with surgical exposure of fractures. Undoubtedly, during wartime, crowded facilities and inadequate material augmented this danger which for many years has been peculiar to continental European operating theaters. In other parts of the world, surgeons do not share this experience and report the overall incidence of postoperative infection in clean cases to be under 1 per cent.[4] Hazard to operating room personnel and the patient from excessive irradiation due to repeated fluoroscopy or film exposure during reduction of a femoral fracture and blind insertion of a nail is very real. The danger of rupture of the femoral artery should the nail miss the distal segment exists and has occurred. The impossibility of dealing with severely comminuted fractures is readily apparent. Marked interposition of soft tissue cannot be corrected by closed methods. These hazards when compared with the accuracy, safety, and ease of open reduction and insertion of the nail under direct vision indicate the open technique to be the method of choice. With the modern surgical complements of controlled anesthesia, blood transfusion, proper instruments and antibiotic drugs, experienced surgeons can approach this procedure with confidence. So again we see an old method which was abandoned

From the Surgical Service of the Minneapolis General Hospital.

Read before the Minneapolis Surgical Society, November 12, 1952.

because of improper application rise in popularity to a point where its employment must be considered in all cases of fracture in the shaft of the femur.

In considering the various indications for the use of the intramedullary nail in the femur, it is necessary to be concerned with the anatomical characteristics of that bone which relate to the mechanical problem of insertion of a Kuntscher[4] nail. The most pertinent factor is the transverse diameter of the medullary canal at different levels in the femur. For all practical purposes, we may consider it broad in the upper and lower thirds and in the mid portion to narrow down to the so-called isthmus. It is at this point that the nail to be inserted must have snug clearance. It is precisely at this point also that fractures are most amenable to firm fixation by the nail. Average transverse diameters of femoral medullary canals in their narrowest portion are about 10 to 11 mm. They vary, however, from 8 to 15 mm. and must in every instance be determined preoperatively by careful measurement of the uninjured side. A description of these methods of measurement will be included in a later paragraph. Stability is afforded the nail and concomitant additional fixation of the fracture also occurs at the point where it passes through the cortex of the greater trochanter. From the foregoing we may state that in all cases the nail may be very firmly fixed in the upper two-thirds of the femur. It then follows that fractures present in the upper two-thirds of the femoral shaft may be suitable for this type of fixation and that fractures in the lower third of the femur are unsuitable because of the inability of the nail to afford firm fixation in the broad flaring medullary area there. Therefore, transverse or short oblique fractures from the subtrochanteric region to the lower third of the femoral shaft lend themselves well to this form of internal fixation. Comminuted fractures in the same region provided they may be reconstructed are not a contraindication. Firm fixation of large loose pieces is accomplished after reduction and fixation of the two major fragments with the nail by insertion of tangential screws through the cortical portion of the femur. Segmental fractures in which two to three inches or more of the femoral shaft may be displaced as a separate fragment are well treated in this way especially because remaining periosteal attachments can be allowed to remain undisturbed thus aiding in maintainance of viability of the segment. As a matter of fact segmental and comminuted fractures with marked displacement of fragments represent extremely difficult problems of management which are greatly simplified by this technique. Pathological fractures from primary or metastatic malignancies often doom their hosts to enforced bed rest and traction throughout the few months which remain to them. Firm intramedullary fixation of these fractures allows the individual to be ambulatory in a pain-free fashion thus solving a most distressing problem. Healing of this type of fracture occurs at the usual rate as well demonstrated in *Case 3* (Table I) (Fig. 3). Obviously in primary malignancy of bone without demonstrable metastasis in which pathological fracture has occurred, appropriate attempts at curative therapy should be employed. It is the opinion of the author that dissemination of malignant cells by the intramedullary nail in the individual with a pathological fracture through an area of metastatic malignancy is an entirely academic question which is of no importance in relation to the practical problem which such an individual presents. Fractures through bone cysts are well treated by the Kuntscher[4] nail with or without curettage and placement of bone grafts as may seem indicated. In fragilitas osseum intramedullary nailing has been employed for therapy of the fracture at hand and as prophylaxis against future fractures. Epileptics with femoral shaft fractures are advantageously treated by Kuntscher's method.[4] When individuals who have sustained bilateral fractures of their femoral shafts are treated in this way, they escape the long trials of traction, suspension, or heavy spica casts which are usually associated with severe disability in the soft tissues of both lower extremities from the long continued immobilization. Multiple fractures in the same individual can be handled in far simpler fashion if the femoral shaft fracture can be fixed firmly and thereafter handled as if the fracture had not occurred. There are few contraindications. Locally extreme comminution over a distance renders intramedullary fixation insecure. Fractures in the lower third of the shaft cannot be securely fixed by the intramedullary nail. The occurence of local sepsis suggests the use of an alternative method. Compound fractures are successfully handled with the intramedullary nail if one observes the necessary and usual precau-

tions which apply to immediate or delayed open reduction and internal fixation in that type of injury. Individuals who are not suitable operative risks by reason of their general condition are excluded. Age is not a contraindication. However, in childhood, femoral shaft fractures are handled so readily by more simple methods with little resulting disability that one would be reluctant to damage the trochanteric epiphyses or subject the individual to an unnecessary surgical procedure. Fractures in the upper third of the femoral shaft which are notoriously difficult to control because of persistent flexion, abduction, and external rotation deformity of the proximal fragment are particularly suitable for treatment by this method. Finally in view of the generally excellent results obtained in the hands of many different groups, one might add that any fracture in the upper two-thirds of the femoral shaft should at least be given the benefit of consideration of this method. Pseudarthroses and delayed union are treated in satisfactory fashion by intramedullary nailing either with or without supplementary bone grafting. Kuntscher states that even infected fractures with delayed union lend themselves well to this plan of management; however, we would be reluctant to employ this procedure under those circumstances. From the foregoing it is apparent that the indications are broad and undoubtedly encompass a far greater array of femoral shaft fracture problems than any other single method hitherto used.

We object to the closed method of insertion of the nail under radiographic control for reasons outlined previously. In a suitable candidate, general preparation is carried out by appropriate sterile preparation of the thigh and groin for twenty-four hours preoperatively. In many instances a Kirschner wire will already have been inserted in either the tibial tubercle or distal femur. This may be left for traction if needed during the operation. General anesthesia in a light plane employing sodium pentothal, nitrous oxide and oxygen, supplemented by 1 per cent novocaine directly infiltrated over the fracture site is used. The patient is placed on the sound side supported by sand bags on the regular operating table. Special thigh holders for the fracture table have been devised and are useful but not necessary. Prior to the day of surgery, a Kuntscher nail of known diameter is strapped to the lateral aspect of the sound thigh in the same plane as that in which the femur lies and x-ray films made with whatever technique yielding the least distortion, that is available. The isthmus of the medullary canal is then carefully measured and likewise the diameter of the nail as projected on the x-ray film. With the actual nail diameter known calculation of the exact size of nail to use can readily be done. It is advisable to leave about 1 mm. for clearance in order to obtain a snug fit. Proper nail length is calculated in the same way. After suitable preparation of the skin and application of sterile drapes to the lower extremity in such fashion that it may be moved freely in any direction, the fracture is exposed through an anterolateral incision between the rectus femoris and vastus latralis muscles with division of the relatively avascular and small vastus intermedius. This approach to the femur can be almost bloodless and in our experience is far less likely to produce shock than the rather brutal lateral muscle splitting incision. The fracture is identified and mobilized by minimal periosteal stripping. The proximal segment is elevated to the surface of the wound. This is aided by adduction of the thigh distal to the fracture. At this point it is well to temporarily insert the selected nail into the medullary canal especially if the fracture is near the isthmus, as a last check for size. In extremely small medullary canals a reamer of appropriate diameter may be used for enlargement to proper size and in very large medullary canals two nails may be interdigitated in such fashion that a fit may be obtained. In the majority of instances, however, the transverse isthmic diameter will lie between 8 and 12 mm., and more often between 9 and 11 mm. A sharp firm metal skewer 50 cm. long over which the hollow nail readily fits is then passed into the medullary canal of the proximal fragment and driven towards the greater trochanter until it passes through that structure and is palpable beneath the skin of the buttock. This maneuver is facilitated by adduction of the proximal segment at the hip joint.

A note of warning may be sounded at this point in relation to the type of tip which is most suitable for the guide rod. Some are made with a drill point tip—these are dangerous in that they may engage the muscles and fascial planes in the buttock and be deflected up into the back. A sharp spear point is desirable. When the tip of the skewer is palpable under the skin

of the buttock, it is cut down upon and allowed to emerge. A cannulated trephine is slipped over the point of the skewer emerging from the buttock and pushed to the greater trochanter which is then perforated to allow subsequent passage of the nail through the cortex. Efforts to pass the nail through this area without preliminary trephining are often successful but may be attended by linear fracture through the upper portion of the femur, therefore, it is deemed advisable not to omit this step. The trephine is then removed, a nail of suitable size slipped over the guide and insertion begun into the medullary canal through the greater trochanter by hammering. As soon as it is apparent that the nail is well started the skewer is removed from below to prevent jamming. The nail is slowly advanced until it is visible at the distal end of the proximal fragment.

A word of caution may be inserted here in regard to the most serious operative complication —namely, impaction of a nail in the medullary canal. Reports indicate that impaction has occurred to a point where extraction or advance of the nail was impossible. Such a problem will not occur if careful preoperative measurements are made. Short temporary retrograde or distal insertion carried out when the fracture is opened readily yields information obviating such a catastrophe. Firm regular advance during final insertion of the nail from above with each hammer blow should occur—if it does not, immediately extract the nail and substitute a smaller size. Stout extraction equipment should always be available in the operating room before this procedure is begun. No nail should be used that does not have adequate provision at its end for attachment of such a device. When the nail has appeared at the end of the proximal segment, the fracture is reduced and the nail driven well down into the distal segment to a point one inch above the articular surface of the knee. It is not advisable to leave more than one-half inch of nail protrude from the greater trochanter for motion of the nail in that region produces bursae which may calcify, distend with fluid, and form rice bodies. A check roentgenogram will at this time prove valuable in determining nail length.

If one is dealing with a comminuted fracture, reduction of the fragments with as little detachment of periosteal attachments as possible should be carried out before the nail is inserted past that area. Firm fixation with screw clamps during passage of the nail followed by insertion of cortical screws for maintenance of position secures good architectural relationship of all fragments. The operative wound is closed, sterile dressings applied, the Kirschner wire removed, if present, and the patient returned to his bed with no additional support. If fixation is precarious because of factors beyond control of the operator, suspension in a Thomas splint is advisable. As experience with the method increases, it becomes apparent that the need for external support rarely exists unless one is dealing with a fracture situated extremely low in the femur. In fractures which are not comminuted and are in the upper two-thirds of the femur, regardless of their obliquity, immediate ambulation is initiated. In communicated fractures or those low in the femur, consideration should be given to modification of the above program. Active exercises of all joints through all planes of motion is mandatory and in fact it is precisely because of this and the safety of immediate full weight bearing that the whole procedure gains its value. Antibiotic therapy is a valuable supplement especially in compound fractures either old or new. As is well known, substitution of antibiotic drugs for sound surgical principles invites disaster. In uncomplicated cases, hospitalization need not exceed seven to ten days.

Theoretical and actual complications of this method of treatment should of course be avoided by intelligent management. Infection has not been a problem in this series of cases. In case number eleven, very slight drainage appeared in the left thigh after the third month which subsequently ceased following extrusion of some bone chips which had been placed about the fracture at the time of fixation. In a previous paragraph, the dangers of improper nail size were discussed. Injury to the patient or attendants may ensue from careless exposure to x-rays during a closed nailing. Similarly, injuries to vital structures may occur during blind nailing. Extrusion of the nail has been reported finally necessitating a small cross screw to hold the intramedullary nail in place. Breakage of the nail at the fracture site as the result of improper construction of the nail has been reported. Violent injury to the nailed femur has resulted in bending of the nail with angulation at the fracture site. In the cases reported, manipulation of the

femur resulted in correction of the deformity in both nail and femur.[7] Atrophic thin bone may allow the nail to drive through the cortex of the distal segment. A nail which protrudes too far from the greater trochanter interferes with gluteal function and often forms a painful calcified bursa. This latter complication was noted in four cases in this series and necessitated removal of the nail in each instance. With the exception of minimal drainage in *Case 11* and painful gluteal bursa formation in *Cases 14, 10, 9, and 4* (Table I) no complicating factors relative to the operative procedure were encountered in this group of patients. The question of fat embolism from marked interference with the bone marrow has been a theoretical question raised by many.

The only individual in this series with demonstrable fat embolism developed it in the classical manner twenty-four hours after his initial injury *(Case 14,* Table I, Fig. 2). The severity of his symptoms due to this complication prevented insertion of a Kuntscher[4] nail for twenty-two days. The circumstances under which evidence of fat embolism was discovered were fortuitous because this patient had already been taken to the operating room where the presence of slight hypotension before the procedure started initiated further examination which revealed conjunctival petechiae, mental confusion, and diffuse pulmonary physical and radiographic signs compatible with fat embolism. How tempted would we have been to report fat embolism as a complication of intramedullary nailing had the procedure been completed that day!

Is it feasible to leave these massive foreign bodies in place indefinitely? At the present time, that problem is solved by experience relative to other buried prosthetic appliances which dictates removal only if their presence is detrimental to the host after their initial function has been accomplished. Nails, therefore, have been removed to date on four of these patients. The indication for removal in each instance has been the formation of a painful calcific bursa in the gluteal region. One must recall that electrolytically inert metals are universally used for making these nails and that there has been no evidence of reaction in the host bone in any instance. Extraction, of course, is not indicated until adequate bony union has occurred. It is readily accomplished at that time by exposing the proximal end of the nail which is easily palpable in the buttock through a one-inch incision and pulling the metal out. In our experience removal has been readily accomplished with slight traction using only a Kocher forcep. The bursae present probably should be excised although we know of one instance, *Case 14* (Table I), where spontaneous resolution took place following removal of the nail without excision of the bursa.

Fifteen patients in whom sixteen Kuntscher[4] type intramedullary nails (Table I) were inserted for treatment of femoral fractures have been reviewed. The patients ranged in age from sixty-four to eighteen. Ten men and five women were treated. Two compound fractures, both of which united uneventfully with no evidence of sepsis in bone or soft tissue are included in this group. Two pathological fractures, one secondary to carcinoma of the breast, and one associated with a primary sarcoma of the femur with multiple metastases were immobilized by intramedullary fixation with Kuntscher nails. One epileptic, a patient with a transverse fracture through the mid femur is included. Two individuals with segmental fractures of the femur, one in the upper third and the other at the juncture of the lower and middle thirds, both obtained excellent results with survival of the large detached femoral fragments. Bilateral femoral fractures occurred in a thirty-five-year-old woman in whom several other severe injuries were present. This operative procedure after two months was followed by sinus formation in the left thigh with slight drainage which ceased after several bone fragments were extruded that had previously been introduced as grafts. Four closed transverse fractures in the middle third of the femur were electively treated by this method as well as three oblique comminuted fractures, one of which was in the upper third of the femoral shaft in a below-the-knee amputee.

The postoperative day on which patients were allowed to bear weight varied from the second to the sixtieth. This great variation was due in large part to the high incidence of associated injuries and to a lesser degree in certain cases because of instability in those fractures occurring low in the femur. One must also add to this in the early portion of the series a certain reluctance on the part of the surgeon to throw caution to the winds and allow full weight bearing with complete reliance on a new untried method.

TABLE I

Patient	Age	Sex	Site and Type of Fracture	Post-operative Day of Ambulation without Weight	Weight Bearing Days Postoperative		Callus by X-Ray Days Postoperative		Complications	
					Partial	Full	First Seen	Adequate for Weight Bearing	Operative	Postoperative
1. O.P.	57	M	Left simple transverse midshaft comminuted	2	82 (against advice)	131	15	150	Loose fragment difficult to reduce. Once reduced, felt secure so no screw used for fixation	Ileus loose fragment slipped 10-14. Placed in suspension till fifty-[illegible] postoperative day
2. E.K.M.	64	F	Left simple transverse mid-shaft	4	10	30	20	162	None	None
3. J.S.C.	26	F	Right simple transverse junction mid and lower ⅓	2	53	110	12	142	None	None
4. A.J.C.	25	M	Right simple comminuted junction upper mid ⅓	8	8	20	28(?)	170	Unsuccessful attempt to pass nail with open reduction.	None
5. M.I.W.	62	F	Right pathologic (breast) junction upper and mid ⅓	3	94	187	22	101	None	Mild ileus
6. R.M.	24	M	Right simple transverse mid ⅓	39	45	78	19	140	None	None
7. P.Z.	60	M	Right spiral—simple junction upper and mid ⅓	5	140	160	7	120	None	None
8. P.A.M.	64	M	Left pathological fracture junction proximal and mid ⅓	22	30	55	12 marked at 8 weeks	140	None	None
9. A.F.	18	F	Left simple segmental or double fracture with 2-inch loose fragment mid ⅓	44			82	170	None	None
10. D.J.	19	M	Left simple comminuted with two large fragments, junction upper and mid ⅓	10	20	about 60		152	None	None
11. B.T.	35	F	Right simple comminuted junction mid and upper ⅓	60	62	80	50	160		
			Left simple transverse junction mid and lower ⅓	8-29	62	80	69(?)	Union 1-5-51	None	Slight drainage [illegible] leg.
12. T.W.	20	M	Right compound mid ⅓ right femur	10	20	25		170	None	None
13. J.H.	37	M	Left simple oblique lower ⅓	5	25	Not at present	22	Still Under Treatment	Foot drop pre-operatively while in traction	None
14. F.F.	50	M	Right upper ⅓ femur. November 2, 1951.	4	4	second week	20	140	None	
15. D.S.	20	M	Compound fracture left femur, middle ⅓	5 weeks		five weeks		140	None	None

TABLE I

Final Result	Concomitant Injuries of Significance or Other Diseases	Size of Nail	Etiology of Fracture	Day of Operation	Operative Technique and Approach	Miscellaneous
ion with normal function	None	9 x 38 mm.	Leg run over by truck	Day of admission October 4, 1951	Antero-Lateral incision, open reduction	
ion with normal function	None	10 x 38 mm.	Stumbled and fell	Day of admission June 11, 1951	Lateral incision, open reduction	
ion with normal unction	Fracture of ribs, right 3, 4, 5.	10 x 40 mm.	Auto accident—driver	10 days post injury, December 9, 1951 (Hospitalized elsewhere 9 days)	Lateral incision, open reduction	
ion with 20 degree imitation of knee lexion	Simple fracture left patella (operated) 11-29-49, fracture carponaricular, right (Epileptic)	9 x 40 mm.	Fell from porch roof	10 days post injury, November 15, 1949	Open reduction, lateral incision (Attempted closed but failed)	Nail removed, painful bursa
ion with function ood	Carcinoma of right breast, metastasis to pelvis, lungs, ribs, skull, scapula	9 x 36 mm.	Rolled over in bed	October 19, 1949	Lateral incision, open reduction	Received testosterone 100 mgm. triweekly
rmal function	Compound comminuted fracture right little finger, extensive lacerations right thigh.	8 x 46 mm.	Motorcycle	9 days post injury, November 22, 1950	Lateral incision, open reduction	Nail removed September, 1951, painful bursa
rmal function mputation stump	Cirrhosis, diabetes (mild), bilateral amputation below knee	15 x 50 mm.	Fell in home (on artificial limbs)	19 days post injury, February 4, 1949	Closed reduction, guide and nail inserted from greater tuberosity under x-ray control	Nail removed May 1, 1950, painful bursa
ient expired 10 nonths after operaion from osteogenic arcoma	Pathologic fracture due to osteogenic sarcoma, pathologic fracture of both humeri	10 x 44 mm.	Patient being lifted from chair	5 days post injury, August 17, 1950	Lateral incision, open reduction	Died May, 1951
	Compound fracture, left tibia	9 x 42 mm.	Motorcycle collided with car	6 days August 16, 1949	Lateral (nail curved)	Nail removed, painful bursa
rmal function	Simple fracture, left patella	11 x 46 mm.	Auto accident	14 days post injury, December 28, 1949	Open reduction, lateral incision, 5 transfixtion screws to hold loose fragment, nail curved	Nail removed, painful bursa
omplete follow-up	1. Fracture mid shaft, right humerus, compound. 2. Fracture, right fibula. 3. Fracture, right clavicle. 4. Basal skull fracture. 5. Multiple lacerations. 6. Fracture, right ilium.	10 x 44 mm.		30 days post injury, June 29, 1950	Antero-lateral bone graft from right ileum to fracture, nail curved	
	Above	9 x 44 mm.	Train auto accident	11 days post injury, June 10, 1950	Open reduction. Lateral incision. Bone graft to fracture site from left ilium.	
ion with normal function	1. Cerebral concussion 2. Multiple lacerations face	9 x 44 mm.	Auto accident	2½ hours after injury, September 21, 1950	Through site of compound wound laterally	
o early to state	Smith fracture left wrist	11 x 42 mm. 12 x 44 mm. nails interdigitated. Canal measured 15 mm.	Motorcycle	August 5, 1952	Antero-lateral incision, two nails used, open reduction	
ion with normal function	1. Severe fat embolism. 2. Severe urticaria due to penicillin	11 x 44 mm.	Auto accident	November 24, 1951	Lateral muscle-splitting incision	
ion with normal function	Simple fracture left ulna; fracture, right second metacarpal	9 x 44 mm.	Auto accident	September 9, 1951	Lateral incision, compound wound closed primarily	Painful gluteal bursa necessitated removal of nail

At present it can be stated that in the absence of severe comminution, or site of fracture in the lower third of the femur, weight bearing can be started as soon as the patient's general condition permits. Study of the rate at which union took place in these fractures is interesting because one of the criteria upon which clinical union of a fracture is judged, namely, stability, was unreliable because of the presence of the immobilizing nail. Similarly tenderness of the callus elicited by springing the fracture failed to assume its usual significance. From a practical standpoint, the exact time of bony union sufficient to bear weight was of little importance because all patients walked well long before this time. In an effort to establish the healing rate, the appearance of enough well calcified callus bridging the fracture capable of bearing weight with no support either internal or external was designated as the time of the union. Difficulty in determining the exact day of union appeared insurmountable because x-rays in almost serial fashion every two to three weeks would have been necessary. It must also be understood that these determinations of union time in femoral shaft fractures treated by this method are conservative and err on the side of marked callus formation. With these things in mind one must accept the given time as an approximation only. It would be possible to state, however, that by the fifth month, union had progressed to a point in all fractures where beginning weight bearing would be considered had the fracture been treated by other methods.

It is interesting to note that one of the most rapid unions occurred in *Case 5* (Table I), a patient with a pathological fracture secondary to carcinoma of the breast where, as is well illustrated by Figure 1, union was strong after three and a half months. As described by Bohler, Kuntscher, and others, a very early cloud of so-called periosteal callus developed often by the tenth or fifteenth day. In all cases in which nails were removed, dense callus approaching the appearance of cortical bone was present (Fig. 1).

There were no complications encountered during the operative procedures and no deaths in the group of patients reported occurred either during the postoperative period or hospital stay. All patients were discharged from the hospital. In two patients, mild ileus was noted. In one individual, a loose fragment reduced at the time of surgery but not fixed by screws became displaced in the postoperative period. Union, however, occurred in the usual length of time. Firm bony union occurred in each case. In only two patients were no concomitant injuries, sequelae of injury, or other disease states absent. Many of these individuals were severely injured patients with multiple fractures and severe head or thoracic traumata. The smallest nail used measured 9 mm. in diameter by 39 cm. in length. The largest was 16 mm. in diameter and was obtained by interdigitating a 12- and an 11-mm. nail. One closed reduction and blind insertion of the nail was done in an oblique fracture in the upper third of the femur in a patient who had a previous amputation of that extremity below the knee. The remainder were open procedures. The etiology of these fractures varied from insignificant injury in the pathological cases to severe injuries sustained in motor vehicle accidents. In determining the optimum time of operation, one must be well aware of the fact that femoral shaft fractures rather rapidly become firmly fixed in positions of displacement and shortening. Three weeks of delay may increase the difficulty of open reduction to a considerable extent. For that reason without exhibiting undue haste, one should attempt to reduce the fracture and insert the nail as soon as possible. Considerable delay was present in many of these cases between the time of injury and intramedullary fixation because of poor general condition due to associated injuries in these individuals. Compound fractures if seen early may be operated upon safely by this method as soon as adjuvant therapy has stabilized the patient. Whether the compound wound will be closed after proper debridement and cleansing with employment of a new incision for reduction and insertion of the nail, or enlarged and used for that purpose, will depend on the location and nature of the wound.

Several of these cases present features especially pertinent to the method being discussed and are presented below:

Case 5.—M. W., aged sixty-two (Fig. 1), was admitted to the Minneapolis Hospital on October 5, 1949, with the complaint of severe pain in the right thigh occurring suddenly as she rolled over in bed. She stated that eight months previously a right radical mastectomy for carcinoma had been performed. X-ray examination of the pelvis and femurs revealed a fracture

in the upper third of the right femur through an area typical of carcinomatous metastases. Numerous other areas of similar bony metastasis were seen in the pelvis, ribs, and skull. Shortly after admission to the hospital, operative roentgenograms on the tenth day after surgery persuaded us to place the patient's thigh in suspension for a period of fifty days. This conservative attitude may appear unnecessarily extreme but does indicate that

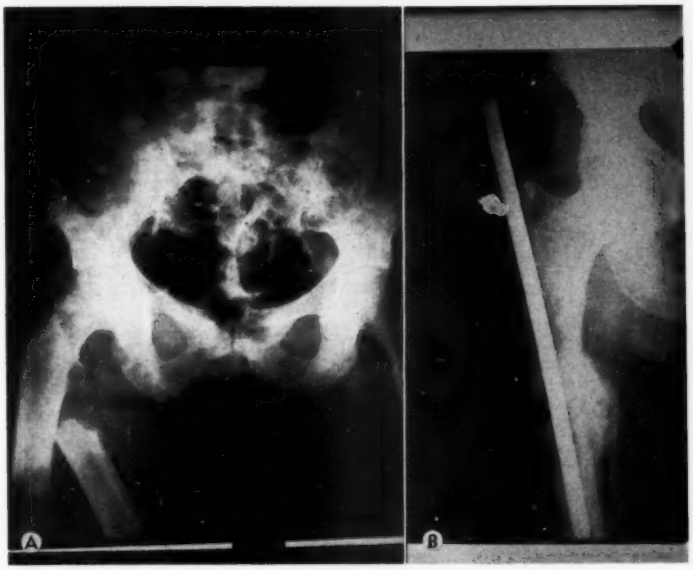


Fig. 1. M. W., aged sixty-two. (A) Pathological fracture right femur, October 5, 1949; intramedullary nail inserted October 19, 1949. (B) Bony union is well advanced by January 1, 1950.

a Kirschner wire was passed through the lower portion of the femur and skeletal traction in a Thomas splint instituted. On October 19, 1949, open reduction of the fracture was carried out with insertion of a Kuntscer[4] nail for fixation. Postoperatively all support was discarded and the patient immediately became ambulatory. Full weight bearing on that extremity without pain was possible. Administration of testosterone was started and the patient was discharged from the hospital. Subsequent x-rays reveal far advanced bony union on January 1, 1950. This is indeed a marked contrast to the tribulations of long-continued skeletal traction with prolonged recumbency necessitated by closed treatment.

Case 1.—O. P., aged fifty-seven, was admitted to the Minneapolis General Hospital, October 4, 1951, having sustained a transverse fracture through the mid portion of the left femoral shaft after being run over by a truck. On the day of admission to the hospital, open reduction and internal fixation of the fracture with an intramedullary nail was carried out. During the surgical procedure, a loose fragment was found which had not been visualized on the preoperative film. Manual replacement of this fragment was carried out. Fixation at the time of surgery did not appear to be adequate for immediate weight bearing because of this loose fragment. A review of postoperative roentgenograms on the tenth day after surgery persuaded us to place the patient's thigh in suspension for a period of fifty days. This conservative attitude may appear unnecessarily extreme but does indicate that in an occasional case some additional support must be at least considered if mechanical factors relative to fixation of the fracture are such that loss of position may otherwise ensue. Examination of subsequent x-rays on December 26, 1952, and July 23, 1952, show progressive bony union.

Case 7.—P. Z., aged sixty, was admitted to the Minneapolis General Hospital on January 17, 1949. This patient had bilateral below-the-knee amputations and while negotiating a stairway, he fell, sustaining a fracture in the subtrochanteric region of the right femur. The extremity was placed in skeletal traction after admission to the hospital. However, in addition to the difficulty encountered in obtaining and maintaining reduction of this fracture, it soon became apparent that the long-continued immobilization necessary for healing would result in disability so great in the fractured limb and in the rest of the patient's body as to jeopardize gravely future active ambulation. Intramedullary nailing appeared to readily solve this problem and on February 4, 1949, this was carried out employing closed reduction and insertion of the nail by the blind method. The patient began to walk on the fifth postoperative day and at the end of the fifth month was bearing full weight on his prosthesis. On May 1, 1950, the nail was removed because of a painful bursa which had developed in the gluteal region. Good bony union was

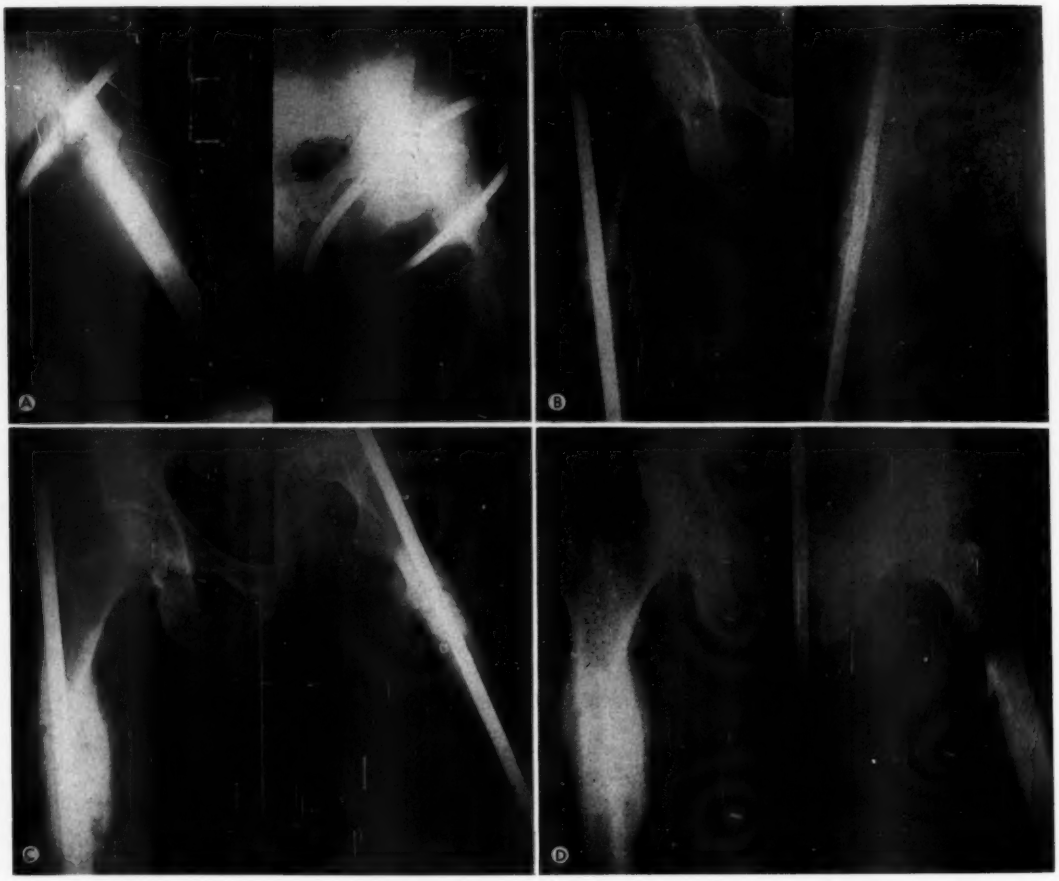


Fig. 2. F. F., aged fifty. (A) Fracture through upper one-third, right femoral shaft, November 5, 1951. (B) Note formation of substantial callus by January 18, 1952, following intramedullary fixation. (C) Healing of the fracture is almost complete, April 25, 1952. (D) The nail has been removed. Note calcified bursa above greater trochanter, July 3, 1952.

apparent by x-ray in this fracture by the end of the fourth month. In restrospect, we are convinced that much earlier weight bearing would not only have been possible and safe but advisable in this instance.

Case 14.—F. F., aged fifty (Fig. 2). This man was admitted to the Northwestern Hospital on November 5, 1951, eight hours after an automobile accident. Exposure on the roadside during cold, inclement weather for three hours occurred before aid was rendered to the patient. He sustained a fracture in the upper third of the right femur which was somewhat comminuted and slightly oblique. Treatment of this fracture by insertion of an intramedullary nail was considered feasible and on the second hospital day, he was taken to the operating room for that purpose. Arterial hypotension was noted in the immediate preoperative examination by the anesthetist. Further investigation revealed conjunctival petechiae fine rales throughout both lungs and drowsiness of greater degree than expected from the preoperative medication. The operation was, therefor, postponed. X-ray examination of the lungs showed the presence of diffuse hazy infiltration throughout both fields. On the following day skin petechiae and mild delirium were noted. A clinical diagnosis of fat embolism was made and for the time being this fracture was treated by skeletal traction. Penicillin was administered because of the pulmonary findings. The signs and symptoms described disappeared gradually during the next ten days. Preparations were again made for insertion of an intramedullary nail when giant urticaria associated with periodic incomplete laryngeal obtsruction was noticed. Treatment with epinephrine and antihistaminic drugs proved ineffectual for control of this problem. Eventually cortisone was administered which promptly controlled the allergic reaction thought to be due to penicillin. Meanwhile good reduction of the fracture was difficult to maintain and callus began to appear with the bony fragments in poor position. Cessation of cortisone therapy was followed by return of severe allergic symptoms on

Fig. 3. J. C., aged twenty-six. (A) Short oblique fracture through lower one-third right femoral shaft, December 8, 1951. (B) Fracture line is still apparent, callus formation not marked, March 28, 1952. (C) Union of the fracture is advancing, August 1, 1952.

several occasions. On November 24, 1951, open reduction and internal fixation of the fracture by a Kuntscher[4] intramedullary nail was carried out with no untoward incident. Cortisone therapy was continued for approximately fifteen days following surgery. Wound healing occurred normally. The patient became ambulatory on the fourth postoperative day and immediately was allowed to bear full weight. Subsequent radiographs (Fig. 2) reveal rapid union of the fracture. Painful bursa formation in the gluteal region necessitated removal of the nail on June 12, 1952, with excision of the bursa. Normal function returned to the lower extremity. It is interesting to note that in the entire series, this case of fat embolism is the only clinically apparent one.

Case 3.—J. C., aged twenty-six (Fig. 3), was admitted to the Minneapolis General Hospital on November 30, 1951, for treatment of an oblique fracture in the lower third of the shaft of the right femur sustained several days previously in an automobile accident. Open reduction with insertion of a Kuntscher[4] nail was carried out on December 9, 1951. The patient was allowed to become ambulatory on the second postoperative day. Weight bearing was not allowed until the sixth week because of a cautious attitude which arose from the location of the fracture in the lower third of the bone together with the obliquity of the fracture. Subsequent radiographs revealed increasing bony union. Normal function ensued in that extremity. Inclusion of this case illustrates the lowest practical level at which one may expect to secure reasonable fixation by the intramedullary nail.

Case 13.—J. H., aged thirty-seven, was admitted to Minneapolis General Hospital on July 18, 1952, following an automobile accident in which he sustained a comminuted fracture in the lower third of the left femoral shaft. Initial examination appeared to indicate closed treatment of this fracture with skeletal traction in suspension because the location and comminution of the fracture would render internal fixation insecure. Reduction, however, proved difficult and on August 5, 1952, open reduction was carried out with the thought that if the fragments of the distal segment were not too loose intramedullary and screw fixation might be used. If this should prove undesirable, standard methods of internal fixation could be relied upon. Measurements of the medullary canal showed its smallest diameter to be 15 mm. The largest nail obtainable at the time was 12 mm. It proved possible to use intramedullary fixation in this instance by interdigitating two Kuntscher[4] nails of 12 mm. and 11 mm., respectively, and inserting both into the femur. Supplementary screw fixation in the cortex of the femoral shaft was used, thus fixation which was clinically firm was secured. Radiographs depicted the large medullary canal and the two nails in place. This patient is ambulatory at the present time bearing about one-half his full weight.

Case 9.—A. F., aged eighteen, was admitted to the Minneapolis General Hospital on July 10, 1949, following a motorcycle accident in which she sustained a comminuted (segmental type) fracture in the middle third of the left femoral shaft and a compound comminuted fracture of the left tibia with extremely extensive lacerations of the leg. Shortly after admission to the hospital, debridement, open reduction, and internal fixation of the tibial fracture with primary closure was carried out. The femoral fracture presented a loose fragment two and one-half inches long which lay transversely. This fragment represented a segment of the entire femur at that point. Conventional methods of closed reduction with sustained skeletal traction ob-

viously were inadequate for treatmnt of such a fracture. Internal fixation with application of a plate would undoubtedly have resulted in much periosteal stripping of all fragments jeopardizing the already precarious blood supply to the central fragment. Intramedullary fixation was readily accomplished with minimal operative disturbance of blood supply to the involved bone. Radiographs taken on July 14, 1950 (one year later) show complete bony union to have occurred. It is interesting to note the atrophy which has occurred in the free segment. Subsequently the tibial fracture required application of an iliac bone graft in order to secure union. Two difficult fractures occurred in a single extremity in this instance. Intramedullary fixation of the unusual femoral fracture permitted that fracture to be almost immediately disregarded when considered in relation to the patient's other injuries. In addition, necrosis of the central fragment with its attendant great disability was avoided.

Fig. 4. D. J., aged nineteen. (A) Radiograph December 14, 1949, illustrating comminuted fracture with a large piece of the femoral shaft markedly displaced. (B) Radiograph December 11, 1951, reveals bony union. Note atrophy and marked absorption of bone in the region of the loose fragment.

Case 10.—D. J. (Fig. 4) was admitted to the Minneapolis General Hospital on December 14, 1949, following an automobile accident in which he sustained a comminuted fracture of the left femur in its upper one-third and a comminuted fracture of the left patella. The femoral fracture presented a large fragment which lay obliquely. Closed reduction with long continued skeletal traction for maintenance of position was unlikely to result satisfactorily for the femoral fracture and would certainly enhance future disability in the knee joint which was the site of a patellar fracture. Solution of this problem by fixation with a Kuntscher nail and several cortical screws in the loose fragment on December 28, 1949, allowed independent treatment of the fractured patella. Excision of the loose fragments and suture of the patellar tendon was carried out ten days later with appropriate postoperative mobilization of the joint in the same fashion as if the femoral fracture were not present. X-rays on December 11, 1951, show good bony union of the fracture with much atrophy of the loose segment which at operation was found to have been stripped completely free of its soft tissue attachments by the injury and was replaced as a free fragment. Subsequent bursa formation in the buttock necessitated removal of this nail.

Case 4.—A. C., aged twenty-five, was admitted to the Minneapolis General Hospital on November 5, 1949, following a fall from a porch in which he sustained a transverse fracture of the right femur, a closed fracture of the left patella and a fracture of the right carpal navicular bone through its waist. The occasion of this fall was an epileptic seizure, to which the patient

had been subject for many years. Patients with epilepsy present special problems when necessity arises for treatment of fractures, especially in the long bones. Displacement and refracture are ever present hazards when convulsions occur. Intramedullary fixation seemed to afford good protection to this patient as well as the other benefits which accure following its use. Accordingly on November 15, 1949, a Kuntscher[4] nail was inserted into the medullary canal of the right femur for treatment of that fracture. Subsequently the left patellar fracture was sutured and the patient mobilized. Serial x-rays depicted the healing process from beginning to end in this instance. Final roentgen examination on August 29, 1951, showed complete healing of this fracture and the nail removed. The latter procedure was carried out because of bursa formation in the buttock. Multiple fractures in an epileptic were simplified by intramedullary fixation of the femoral fracture in this case.

Summary

The method of internal fixation of femoral fractures by open reduction and insertion of a large intramedullary nail is one which has proven safe, efficient, and productive of excellent end results. The advantage of fixation secure enough to allow immediate mobilization of an individual with a femoral shaft fracture is readily apparent. Dangers inherent to the method are resolved by careful preoperative evaluation, proper operative technique, and an appreciation by the surgeon of the manifest problems peculiar to the control of all fractures. Sixteen fractures in fifteen patients are presented with the known end result. The method has proven satisfactory in this group of individuals who collectively represent most of the special indications for which use of the intramedullary nail is of value.

Conclusions

On the basis of this study, the following predications are possible. Intramedullary fixation of femoral fractures should be considered of great value in:

1. Pathological fractures.
2. Segmental fractures.
3. Certain comminuted fractures.
4. Fractures in the upper third of the femoral shaft.
5. Individuals requiring treatment for multiple fractures.
6. Grand Mal epilepsy.
7. Selected cases with transverse or short oblique fractures above the lower third of the femur.

Bibliography

1. Bohler, L.: Medullary Nailing of Kuntscher. London: Balliere, Tindall & Cox, 1948.
2. Eder, P.: Personal Communication.
3. Groves, E. W. Hey: Ununited fractures with special reference to gunshot injuries and the use of bone grafting. Brit. J. Surg., 6:203, 1918.
4. Kuntscher, G.: Die Marknagelung von Knochen bruchen. Arch. f. klin. Chir., 200:443-455, 1940.
5. Lane, U. A.: On the advantage of the steel screw in ununited fractures. Lancet II, 1500, 1893.
6. Venable, C. H.; Stuck, and Beach, A.: Effects on Bone of the Presence of Metals: Bases on Electrolysis. Ann. Surgery, 105:917, 1937.
7. Watson-Jones, R. et. al.: Medullary nailing of fractures after 50 years, with review of difficulties and complications of operation. J. Bone and Joint Surg., 32:654-729 (Nov.) 1950.
8. Zierold, A. A.: Reaction of bone to various metals. Arch. Surg., 2:365-412 (Sept.) 1924.

SOLITARY NONPARASITIC CYSTS OF THE LIVER

(Continued from Page 836)

Bibliography

1. Abolfathi, H.: Kyste solitaire nonparasitaire due foie. Sem. Hop. Paris, 28: Suppl. 13, pp. 141-143, 1952.
2. Attix, F. F.: Nonparasitic cysts of the liver. Lancet, 59:38, 1939.
3. Bland-Sutton, J.: Solitary nonparasitic cysts of the liver. British M. J., 2:1167, 1905.
4. Boyd, S.: Nonparasitic cysts of the liver. Lancet, 1:951, 1913.
5. Caravati, C. M.; Watts, T. D.; Hopkins, J. E. T., and Kelly, F. R.: Benign solitary nonparasitic cysts of the liver. Gastroenterology, 14:317-320, 1950.
6. Cousins, J. W.: Large hepatic cyst simulating an ovarian tumor. British M. J., 11:700, 1874.
7. Davis, C. R.: Nonparasitic cysts of the liver. Am. J. Surg., 35:590-594, 1937.
8. Jennings, W. K.: Solitary nonparasitic cysts of the liver. Surgery, 6:507-510, 1939.
9. Montgomery, A. H.: Solitary nonparasitic cysts of the liver in children. Arch. Surg., 41:422, 1940.
10. Munroe, H. S.: Solitary nonparasitic cysts of the liver. Ann. Surg., 116:751-762, 1942.
11. Ochsner, E. H.: Unilocular cyst of the liver. Ann. Surg., 107:829, 1938.
12. Stoesser, A. V., and Wangensteen, O. A.: Solitary nonparasitic cysts of the liver. Am. J. Dis. Child., 38:241-257, 1929.
13. Witzel, O.: Hemicephalus Mit Grossen Lebercysten Cystenierren und Einer Reihe Anderer Missbild Ungen. Centralbl. f. Gynak, 4:561, 1880.

ALLERGIC REACTION TO PARA-AMINOSALICYLIC ACID

Report of Case

ROBERT P. KOENIG, M.D.

Paynesville, Minnesota

RELATIVELY few instances of marked systemic allergic reactions have been noted in the use of para-aminosalicylic acid, in spite of its widespread use in tuberculosis therapy.[3]

Since the introduction of PAS in treatment of tuberculosis, gastrointestinal irritation and varying forms of skin eruptions have been noted, but few serious allergic phenomena have been reported.[1,2,4] Indeed, some experimental evidence exists showing that PAS has an antagonistic effect on allergic reactions.[5]

The case presented here represents a more marked systemic response to PAS than is usually seen and illustrates the necessity of keeping allergic responses to drugs in mind in evaluating acute serious illness. A case reported by Hall[2] further illustrates this necessity, wherein a patient under penicillin therapy was subjected to an exploratory laparotomy—without revealing any surgical condition. Later review of this case convinced the author that the symptoms and findings were due to an acute allergic response to penicillin.

Case 1.—This case is that of a twenty-two-year-old single Mexican girl who was admitted to Ancker Hospital, Saint Paul, with bilateral apical tuberculosis on June 4, 1952. She was started on streptomycin, one gram bi-weekly and PAS, 12 gm. every day in divided doses of 4 gms. During the first month of therapy, the patient noted only occasional loose stools and vague, mild abdominal complaints.

However, on July 5, 1952, after one month of PAS and streptomycin therapy, she complained of generalized itch and skin rash, and later on of dizziness and nausea. Her temperature rose to 102° F., orally, and the complaints persisted, including frequent emesis, general malaise, severe headache and myalgia. Her blood picture revealed a rising eosinophilia of from 1 per cent on admission (prior to PAS and streptomycin) to 16 per cent on July 14, 1952.

On July 11, 1952, the patient complained of severe abdominal pain, especially in the right lower quadrant. Examination at this time showed rebound tenderness in the lower abdomen and marked tenderness on pelvic examination. A diagnosis of pelvic inflammatory disease was entertained at this time, but cervical smears and cultures were negative.

The patient was treated with penicillin and terramycin, and because she complained of "feeling sick" after taking PAS, this, as well as streptomycin, was discontinued. The patient recovered rapidly and was without complaint until August 2, 1952, when PAS, without streptomycin, was given through an error. Following one dose of PAS (3 gm.) the patient immediately developed her previous complaints again. Examination revealed rebound tenderness in the lower abdomen, active bowel sounds and a markedly tender cervix. Her temperature rose to 104°, pulse rate was 144 and her lungs were clear. A peripheral blood study revealed a white blood count of 16,200 with a differential of 86 per cent PMN, 3 per cent lymphocytes, 2 per cent monocytes, and 9 per cent eosinophiles. A repeat blood study the same day showed a rise in the eosinophiles to 19 per cent. A flat plate of the abdomen was interpreted as showing a possible ileus and free fluid in the peritoneal cavity.

The patient was again given antibiotics (terramycin), but PAS was discontinued after the one offending dose, and antihistamines were given. The patient improved during the next two days. A repeat blood study revealed an eosinophilia of 42 per cent at that time. Subsequent blood studies showed a gradual disappearance of the high eosinophilia.

There was no history of any previous allergic reactions, even to drugs related to PAS, such as aspirin. A patch test applied after recovery using powdered PAS produced a marked red, elevated, moist lesion while controls were negative.

The patient was subsequently treated with INH and successfully underwent surgical treatment for her tuberculosis.

Bibliography

1. Boudin, G., and Job, J. C.: Accident mortel brutal de lendemain d' une unique et premiese perfusion intraveineuse de PAS. Bull. Soc. med. hop., Paris, 68:7-8, 1952.
2. Hall, Wendell H.: The abuse and misuse of antibiotics. Minn. Med., 35:629-32 (July) 1952.
3. Kierland, Robert D., and Carr, David T.: Reactions to para-aminosalicyclic acid. Proc. Staff Meet., Mayo Clinic, 24:539-543, 1949.
4. Kniest, W.: Schwere allergische Reactionen gegen p-Aminosalizylsoure. Deutsch. med. Wchnschr, 77: 676-7 (May 23) 1952.
5. Trethwie, E. R.: Effect of PAS on allergic processes. Med. J. Australia, 1:638-639 (May 10) 1952.

History of Medicine In Minnesota

MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE
Granite Falls, Minnesota

(Continued from the July issue)

In 1885 Canby had a population of 500, and Granite Falls was a city of 1,200. In that year Dr. Carlos Lord Chambers of Mantorville opened offices in Canby. Another doctor to locate there was Dr. Albert R. Torgersen, graduate of a Norwegian medical school.

Dr. Chambers was just beginning medical practice. He found time to sing on the programs of the Canby Literary Society, to head committees, to act on the school's Board of Examiners. For a time he was county physician for the west ten townships of the county. Dr. Torgersen had some difficulty convincing people that he was qualified to practice in Minnesota, according to the *Canby News,* but he was a determined man and soon built up a good practice. He was also a graduate pharmacist, and in 1888 bought out the Clarkfield drug store and removed to that village, the first doctor to settle there.

In 1885, Dr. Florado H. Wellcome gave up the practice of medicine at Granite Falls to go into banking. His real interest had always been in business, and for a number of years he had been interested in a loan agency. This was a lucrative business in the pioneer days, for times were hard, money scarce, and interest rates very high. It was common practice to demand of the borrower who wanted $100 that he execute a note for that amount, at ten or twelve percent interest, and pay $10 as a commission for making the loan. Eastern capital could be secured at a low rate of interest for investment or loans, and a search of the records would reveal some famous people as mortgagees in this remote region at that time. Dr. Wellcome also loved to travel. The Wellcomes were childless, for their daughter, Mamie, had died in infancy, and they traveled east and west, to Europe, Egypt, and the Holy Land. In 1900, the doctor removed to Minneapolis to continue his successful business career.

Two "lady doctors" were announced by the *Granite Falls Tribune* in the fall of 1886. They were Adelia M. Higley and Ella Webster, and they rented an office over the post office. However, they found that the State Board did not recognize the school from which they had graduated, and therefore they could not get licenses to practice.

The eighties were not prosperous years, but they were nevertheless years of progress. The sod and log houses had been replaced by houses of frame construction. Schools and churches had been built in every community. But farm prices were very low, in consequence of which every kind of business suffered. High freight rates and unfair discrimination on the part of railroad companies added to the farmers' troubles, for the railroad companies which had been largely financed

and much pampered by government had grown powerful and greedy. They arbitrarily fixed freight rates and made discriminatory regulations which in some cases were almost confiscatory. The cost of getting grain to market was often in excess of the amount derived from the sale of it. For redress of such grievances farmers in Yellow Medicine County lent support to new third parties such as the Greenback Party and Farmers Alliance, and put their own candidates in the field.

The people of Granite Falls had visions of prosperity when traces of gold were found in the Minnesota river silt, and indications of the precious ore caused a mining company to sink a mine shaft near Minnesota Falls. The mine was called the Ben Harrison. The mine shaft reached a depth of eighty-five feet by the time the first ton of ore was ready for shipment. After this shipment activities ceased, probably because the gold was found in small quantity; many local citizens had invested heavily in the mine, and it may well be also that the man who years ago told the writer he had "salted" that mine had actually something to do with it.

Coal also was found, on the Finnis farm; but this too in quantities too small to be profitably developed. Still, the papers of 1886 continued to advertise coal from the local mines at Redwood, as well as brick from the old brick yards on the Yellow Medicine. Traces of silver and lead were also found in the county.

In the face of such disappointments the forward looking citizens of Granite Falls nevertheless approached the County Board with an offer to contribute a specified amount toward a new Court House, and posted a bond for payment. This project had been entertained by the county board for some time, and with this encouragement they issued bonds under a special act to raise $15,000 for a new building. In November, 1888, an architect, Frederick E. Hoover of Minneapolis, was commissioned to draw up the plans, and the building was complete and ready for occupancy in 1890.

The death records of the eighties show the usual causes of death: diphtheria took the largest toll of life; consumption, smallpox, "perished in the storm," "cyclone," pulmonary Phtisis". "Inflammation of the lungs," "bleeding of the lungs," "lung fever" "tiphus fever," "dropsy of the heart," "could not learn," "cholera morbus," "cholera infantum," and "inflammation of the bowels." And one death from leprosy.

Discovery of leprosy cases in the county was reported in the *Granite Falls Tribune* of August 15, 1884, as follows:

> "Two weeks ago we stated that there were several cases of leprosy in Yellow Medicine County. Thursday last Dr. Stoddard of Beaver Falls brought to Granite Falls a man who lives a half mile south of Sacred Heart, who has had the disease for four years, and a consultation of physicians was held to determine whether or not it was a case of leprosy. Dr. LaRue of Appleton, and Dr. Rogers of Montevideo being present. The physicians were satisfied that it was a case of leprosy. Photographs of the man were taken, and one, with a history of the case, was sent to Professor Phiffard of New York, a specialist. While here Dr. Stoddard visited a man living in the town of Sannes who has had the disease so long that his fingers have fallen off and he is reduced to a mere skeleton. There is another in Stony Run, making three in all within a radius of ten miles of Granite."

The "man in Sannes" died the day after the consultation at the age of forty-two years. He had come to Minnesota from Norway June 10, 1870.

During the eighties the amount required for poor relief increased greatly, due to the hard times. The county had acquired a poor house but many families were given aid to maintain them in their own homes, and some individuals were boarded out on contract for from $1.88 to $5.00 per week, depending upon the circumstances. In 1884, the total amount spent for the poor was about one-third of the

amount spent for all purposes. In 1887, the Board decided that to "promote the health, happiness, and prosperity of the people of the county it would grant no liquor licenses during the year; it also acquired a tract of land for a poor farm, erected buildings upon it, stocked it with machinery, animals, and furniture. Thereafter the commissioners ruled that any person requiring more than $50 aid from the county in any year should be taken to the poor farm, and further specified that no dealer in liquor should sell liquor to any person receiving public aid.

The County Board sometimes extended aid to persons who as immigrants were not entitled to receive assistance, or when through hardship or misadventure common decency demanded such aid. But they were meticulous in requiring other counties to bear the burden for the poor and sick who had come from them to Yellow Medicine County. There is even an instance where the County Board billed Chippewa County for one-half of the cost of burying a stranger who drowned on "the Chippewa side of the Minnesota River." Families were sometimes removed to their former homes by the sheriff, and the Board's policy toward Indians was, no aid whatsoever.

The Indians were driven out of the county after the uprising, but Yellow Medicine was their ancient home, and in time numbers of them came drifting back to live in scattered groups along the Minnesota or Yellow Medicine rivers. By 1888 a community was formed which continues as the Pehijutazi Village now scattered along the Minnesota river three miles south of Granite Falls.

The Indians were desperately poor and many were sick, victims of the dread and incurable tuberculosis. Although some of them owned lands in South Dakota the income from them was small. Annuity payments, when forthcoming, were quickly spent, for the Indians were by nature improvident. No hospitalization for Indians was provided, nor was the contagious nature of tuberculosis fully recognized. The sick lived in the poor and unhealthful surroundings with the well, and it was not unusual for an entire family of children to be wiped out by the disease. Sometimes in a family of eight or nine only one child would survive, and it seemed that the tribe would soon die out.

The County Commissioners recognized the Indians as a potential drain upon county resources, and in 1889 instructed the county attorney to find out "who owned the Minnesota River woods" where they were camping. But if any effort was made to dislodge them it was unsuccessful. The board's policy of no assistance was strictly enforced, with the single exception, of appropriating $12.00 to buy a coffin. In January, 1891, when the Indians petitioned for aid the county attorney was directed to remind Washington that it was the business of the federal government to look after them.

In 1891, Dr. George W. Nichols, formerly of Rochester, Minn., settled with his family at Wood Lake. He also opened an office in Granite Falls. Dr. Nichols was fond of spirited horses and a smart turnout. *The Granite Falls Tribune* comments: "Dr. Nichols invited us to visit a patient with him, and we can vouch for the rapid transit to and from." He practiced in Wood Lake until 1895.

In the same year Dr. Albert W. Cummings, formerly of Sauk Center, located in Granite Falls. His office was in a small, one story building on Prentice Street which is now used as a shoe repair shop. He was of the homeopathic school and had a good practice.

In Canby Dr. Chambers was about to go into the drug business, although he was not a pharmacist; and his friend and chess partner, Adolph Gilberson, sold out his drug business to Dr. James McPeek of Gary, South Dakota, and his partner O. M. Eichinger.

Dr. James McPeek came to Canby in the spring of 1885 and at once opened offices "over Gilberson's old stand." He was not a pharmacist, but continued in the drug business as long as he lived in Canby. The doctor and his family moved into the house of Mrs. O. N. Lund, where a new barn was built for the accommodation of the doctor's fine team which had "carried off the laurel in a race with one Thompson at the Gary Fair."

Late in the year Dr. Chambers sold his drug business, announcing that he would accept "a lucrative position in New York with the Bellview Hospital." His departure left Dr. McPeek the only doctor in Canby, but this was soon remedied by the arrival of Dr. Charles A. Atherton. "He is from the city hospital and we understand he is a man of experience in the medical profession. His office and headquarters will be in the drug store of Dorr and Jenson." Dr. Atherton was immediately in demand socially, took part in programs of the Literary Society, was appointed county physician for the west ten townships; but after about six months he left Canby to practice in Toronto, South Dakota.

Dr. E. A. McPeek "from the eastern part of the state" spent a few months in Canby in 1892, assisting his brother during his absences in the long illness of Mrs. McPeek, who died in January, 1892. He also planned to locate permanently in the county but this plan was not carried out.

Several of the larger towns in the county were by this time looking forward to improvements such as the installation of electric light and sewer systems. The city of Granite Falls let the contract for this work in the winter of 1892 and work began the following spring. In Canby there had been agitation for the erection of a water tower and pumps to supply water for fire protection, but the $5,000 bond issue presented to the voters for approval was defeated by a vote of sixty-six to thirty-two. The irate editor of the *Canby News* attributed this defeat to the Council's purchase of four dozen pails. "Ye gods," he cried, "how we have tumbled!"

The City of Canby was located on the prairie nine miles from the Dakota line, and every year its citizens were reminded of the fire hazard when prairie fires flared in the distance. Each fall the city would be "burnt around" as a fire protection measure. But the fire which threatened its existence on September 5, 1893, originated in a store, and driven by rising winds the flames raged through the business district. It spared the new city hall and bank building but destroyed almost two blocks of frame business buildings, including the McPeek and Eichinger Drug store. Total loss was estimated at $150,000.

Yellow Medicine County felt repercussions of the panic of 1893. The local board of Granite Falls (quoted in the *Tribune*) chided President Cleveland for going snipe shooting "while we by charity are fed." That indefatigable traveller, Dr. Florado H. Wellcome, returned from one of his extensive trips through the west and reported widespread unemployment.

Farm prices continued low, but taxes and land values were steadily rising. The farmer, caught between two extremes, found it hard to make more than a bare living. Such protective tariff measures as had been advocated were designed to protect industry only. Pioneer settlers were leaving the farms for the small towns where, with a garden patch, a cow and a flock of chickens they could live at least as well and much more comfortably than on the farm. The younger generation were not so wedded to the land; they were not so sure they wanted to put in a lifetime of hard work for small returns, and they drifted in ever increasing numbers to the industrial areas which offered them a higher standard of living and better educational advantages. For the first time in history the population of the state

was almost equally divided between the farm and urban areas. Alarmed at the drift toward the cities the state government for the first time looked into conditions of farm life, and offered aid to rural school systems as an inducement to keep young people on the farms.

Still, the spirit of the time was optimistic and buoyant, for people lived well on a little money, and it was a period of expansion and boundless hope for the future.

New doctors were attracted to the county. In the spring of 1894 Dr. Tord Nielson, a graduate of the Royal University of Norway, located in Canby. He had been licensed in Minnesota in 1883, in North Dakota in 1885, and practiced in Minneapolis prior to his arrival in Canby. This move proved not a happy one for Dr. Nielson and he left Canby after about two years.

In the next year a number of new arrivals are noted. Dr. J. Woodbury Donnell settled in Clarkfield, where Dr. Albert Torgersen was practicing and also conducting a drug business. Dr. Martin A. Nelson also settled in Clarkfield; he had just graduated from the Physio-Medical College of Indiana, and this was his first field of endeavor.

In the fall of 1895, the little village of Echo had positive proof of the benefits sometimes conferred by an ill wind. A blizzard brought that community its first resident doctor.

Dr. Thomas J. Gill was on his way to Appleton, Minnesota, when the storm blocked all rail traffic. Passengers of the Minneapolis and St. Louis were stranded in Echo, and Dr. Gill took a room at the Nicollet House. The community was in the midst of a diphtheria epidemic, with no doctor nearer than Granite Falls or Redwood Falls. Word that there was a doctor at the hotel flew through the town, and in a matter of hours a man was at his door to beg his services for two sick children. The doctor found the little girls ill with diphtheria. For Dr. Gill there could be no question of leaving the community while the need was so great, so he stayed on. By the time the epidemic was under control he had made up his mind to stay and practice in Echo.

Dr. M. N. Triplett located in Hanley Falls in 1895, for that little village had had no doctor since Dr. Sweet had left in 1891. Dr. Triplett had just graduated from the University of Louisville. After two years at Hanley Falls he removed to Dawson, but continued his professional card in the local papers and occasionally returned to care for his patients in the county.

In 1896, Dr. James A. Watson began his medical practice in Wood Lake, succeeding Dr. Nichols. He was a Canadian, born in Ireland, a graduate of the University of Manitoba, and he was one of three brothers to launch careers in Yellow Medicine County. Frederick G. Watson, a brother who was a druggist at Wood Lake and later became a doctor who located in Clarkfield, had preceded him. Another brother, Charles, took his medical training at Hamline University and began practice in Boyd, Minnesota, a small village not far from Clarkfield, from which point he frequently came to Yellow Medicine County to help his brothers or take over their practices during their absence.

Dr. James McPeek had been for a time the only doctor in Canby when Dr. William D. Calvin and his wife, who was also a doctor, settled in Canby. Dr. Calvin soon proved himself a skilled physician and was very well liked, but Mrs. Calvin was unhappy over the lack of opportunity for herself. It was principally for this reason that the Calvins left after about a year in Canby. Dr. McPeek left Canby for St. Charles in 1896.

Then Dr. William A. Angell opened offices in a building which housed an implement store. His wife was a nurse, and a very beautiful woman, and within

a short time the Angells were well established. Dr. Angell was appointed County Physician for the ten west townships of the county, and served in this capacity for a number of years. His practice and his popularity grew year by year; he travelled as far west as Brookings, and all through the surrounding counties. He kept two teams and two drivers, and it was his habit to take what rest he could in sleeping while they drove.

Another doctor coming about the same time was Dr. Thomas McKey, who had spent ten years in practice at Clear Lake, South Dakota. He was to remain in Canby until after 1900.

Dr. Nicolay H. Schjelderup (later spelled Schelderup, Sheldrup) began his medical practice in June, 1897, directly after his graduation from Rush Medical College. Born and educated in Norway, he appended the words "Skandinavisk Laege" to his professional card which appeared in most of the county newspapers. The county was by that time so thoroughly a Norwegian community that English was almost a secondary language in parts of it. Church services in Norwegian were continued until comparatively recent times.

Dr. F. G. Sparling began to practice in Wood Lake about the same time. Since he and Dr. Scheldrup worked together and helped each other the impression was that they had long been friends. Dr. Sparling is remembered as a young man who helped the residents of Wood Lake through an epidemic of measles, but since that community has no newspapers of that period, and did not contribute items to any county newspaper, there are no records of him that are at all informative.

In the May 10 issue of the *Clarkfield Advocate*, 1897, Dr. Triplett's professional card gives his address as Dawson, and there is mention of a new doctor, John O. Dyrnes, at Hanley Falls.

Dr. John O. Dyrnes came to Hanley Falls without any intention of remaining there, for he was waiting for an appointment as medical missionary in some foreign field. He had been born in Norway in a poor family, and under most adverse circumstances won for himself an elementary education in the United States after he had attained manhood, then took his medical and theological training at the same time, while also supporting himself by working at various menial occupations. After about two years of practice at Hanley Falls and other places he received his appointment, went to Paris to study French and take additional medical training, then to Madagascar where he devoted the rest of his life to his work as a medical missionary.

The next doctor to locate in Hanley Falls was Dr. Walter M. Beck, who according to the *Clarkfield Advocate* of March, 1898, "has moved into the Wilson Building and is prepared to receive calls at any time." As a further introduction a later issue states: "We understand the doctor has had an extensive practice of twelve years, has diplomas from two leading eastern medical colleges and two hospitals, and for five years conducted a hospital of his own in Wisconsin, and we may judge that he is a physician of exceptional qualifications." But Dr. Beck barely had time to get settled in the county, for when the Spanish-American War began he immediately answered the call for volunteers. According to the *Clarkfield Advocate* the doctor went in as a private. He was assigned to the Thirteenth Minnesota Regiment, one of three raised in the state for service in that war and the only regiment actually to see active service. The Thirteenth left San Francisco on the ship *City of Para*, was transported first to Honolulu, where the troops were royally welcomed, and then to the Philippines. An interesting commentary upon the food of soldiers in that war was furnished by Private Bohannen of Clarkfield and reported in the *Advocate:*

"We are fed worse than cattle, and our fare consists chiefly of hard tack, poor coffee, and "sow bellie" and a flavor of potatoes but on some occasions we get even worse than that. One night our supper consisted of a half a cup of soup (so-called) and a handful of hard tack. The officers do not appear to care as they get a good living themselves."

As a private Dr. Beck distinguished himself by his sharp-shooting, for he was an expert marksman and proud of his skill; and as a doctor, when he headed a military hospital on the island. On completing his military service he did not immediately return to Hanley Falls, but eventually he resumed his practice there and made a reputation for himself as a doctor and as one of the most colorful figures in the history of Hanley Falls.

During Dr. Beck's absence Dr. Alonzo T. Munro had settled in Hanley Falls, but in 1899, he removed to the larger village of Wood Lake. He became a candidate for coroner but was defeated by the incumbent, Dr. F. J. Cressy of Granite Falls.

In June, 1898, a new doctor was announced by the *Clarkfield Advocate.*

"Dr. E. H. Kerkhoff came up from Minneapolis last Friday and is now permanently located in Clarkfield. The doctor comes very well recommended, is a very pleasant gentleman to meet, and we predict success for him in our midst. He can be found at the drug store or Commercial House for the present. For the benefit of those who do not speak English we will state that the doctor can converse in both Skandinavian and German."

The doctors then practicing in Clarkfield were Dr. Albert R. Torgersen and J. Woodbury Donnell.

Barely two weeks after his arrival Dr. Kerkhoff was asked to make a professional call upon Dr. J. Woodbury Donnell, who had been drinking rather heavily, in his quarters above the Lewis Drug Store. Dr. Kerkhoff found Dr. Donnell in convulsions and bleeding profusely from self-inflicted wounds in the throat. The doctor tried to close the wounds and stanch the bleeding, but Dr. Donnell did not want help; he apologized for not having done a better job. He had taken strychnine before cutting his throat, and died in great agony within a short time. He was a single man, forty-seven years of age.

In November Dr. Kerkhoff returned to Minneapolis for further hospital training in the city hospital, leaving "many fast friends all of whom will greatly miss him." The vacancy thus left was promptly filled by a new arrival.

"Dr. William B. Torgerson, formerly of Cannon Falls, this state, has located at Clarkfield and has fitted up offices over the Clarkfield State Bank where he can be found day and night. The doctor is a graduate of the University of Minnesota and comes highly recommended."

Dr. John S. Kilbride settled in Canby in 1900, after some years of practice in the county, from his former headquarters in Dawson, Minnesota. He expected to make Canby his permanent home, and did in fact live there for many years, except for an interval of three years when he practiced at Watertown, South Dakota. He practiced as a general practitioner but was a specialist in diseases of the eye, ear, nose and throat. He attended clinics both at home and abroad, and was at one time President of the Camp Release Medical Society.

(To be continued in the September issue)

President's Letter

ROUND-UP SEASON

For much of Minnesota's population, summertime means a time of vacations, traveling, leisurely evenings and weekends and thorough enjoyment of the state's many marvelous resources.

But for children of a certain age group it means a time of looking forward, with either dread or extreme interest, to the fall, when they will be entering school for the first time.

The prospect of entering into the regular daily routine of school is a very serious business in most homes. And rightly so, too. Preparing a child for this important milestone is a vital part of his training and education.

Parents and teachers in Minnesota are aware that the health of the school-age youngster is of primary concern when he enters school. For many years now, the Minnesota Congress of Parents and Teachers, in active co-operation with the Minnesota Tuberculosis and Health Association, has developed a program of pre-school examinations for children. Called the Summer Round-Up Program, this project has done great good in bringing children in, either in groups or individually, for a thorough physical examination before entering school.

The program calls for active support and co-operation from the state's physicians. Without their willing help, fewer children would be examined, and consequently, many of them would continue in school with some minor defect or illness which could have been checked had a pre-school examination been given.

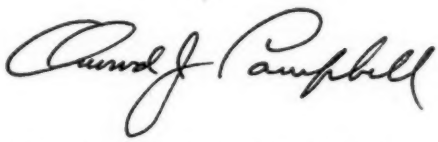
During the summer of 1952, about 22,000 children were examined in a group or individually as part of the Summer Round-Up Program of the PTA. This is out of a total of about 28,000 children entering classes in the fall of 1952.

It is interesting to note the extent to which physicians of Minnesota co-operated in this effort. Of that 22,000, nearly 19,000 children were examined in the office of their family doctor, the remaining portion being examined in a group.

As part of the routine physical examination, children needing vaccination and immunization are given this protection. Also, many of the children are given routine dental and eye examinations. Corrections are recommended, not only by the child's dentist and eye doctor, but by the family physician as well, and most corrections are made quickly to avoid any possible future complications.

The importance of excellent health for a child starting school cannot be over-emphasized. Considering the many problems confronting a new young student, it is imperative that he not be handicapped from getting a good start, by some small health matter which could have been found and corrected in a pre-school check-up.

I would urge physicians to play their part willingly in this statewide program of the PTA. Not only can doctors co-operate fully when called upon to do so, but they can take the initiative in their own community, working with and through parents and teachers to help bring better health to children beginning their education.



President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

NEW EDITOR AND BUSINESS MANAGER

WITH THE September issue of MINNESOTA MEDICINE, the present editor will turn over his responsibilities to the new editor, Dr. Arthur H. Wells of Duluth. Dr. Wells is a graduate of Harvard Medical School, class of 1930, and spent some five years at the Research Hospital in Kansas City before moving to Duluth in 1936. He is at present pathologist at St. Luke's Hospital in that city. He has been chairman of the Cancer Committee of the Minnesota State Medical Association since 1945 and was elected president of the Minnesota Division of the American Cancer Society in 1948 to succeed Dr. W. A. O'Brien. He has been a member of the Editing and Publishing Committee of MINNESOTA MEDICINE for several years. Dr. Wells is relinquishing his responsibilities with the Cancer Society in order to have more time for his new editorial duties.

Simultaneously with the change in editors, the office of business manager of the journal will be relinquished by Mr. J. R. Bruce, past president and present chairman of the Board of Directors of the Bruce Publishing Company of Saint Paul, who has been publishing the journal since its first appearance in January, 1918. Thus Mr. Bruce has been business manager of the journal nearly thirty-six years, a longer tenure than that of the retiring editor who assumed his duties officially on April 1, 1919. MINNESOTA MEDICINE was the first medical publication of the many medical and other journals and books to come off the presses of the Bruce Publishing Company. The high quality of all the Bruce Publishing Company publications is due to Mr. Bruce and his fine organization.

The title of business manager will be assumed by Mr. R. R. Rosell, executive secretary of the Minnesota State Medical Association, who has proven himself a most efficient executive during his long tenure of office as secretary of the State Medical Association. Communications to the business manager of MINNESOTA MEDICINE may continue to be mailed in care of MINNESOTA MEDICINE, 2642 University Avenue, Saint Paul 14, Minnesota. Likewise, letters to the new editor of the journal may continue to be sent to MINNESOTA MEDICINE at the same address.

C. B. DRAKE

MEDICAL LICENSURE STATISTICS FOR 1952

STATISTICS regarding the number of physicians dwelling and practicing in Minnesota and the United States possess a certain interest. According to the fifty-first annual medical licensure report of the Council on Medical Education and Hospitals of the AMA,* there were 214,667 physicians licensed in the United States at the close of the year 1952. Of these, 151,363 were in private practice, 6,677 were in full-time research and teaching, 28,366 were interns, residents and physicians engaged in hospital admintration, 8,166 were retired or not in practice, and 20,095 were in government services.

During the year 1952, 6,885 new licenses were issued and 3,829 physicians died, making a net gain of 3,056. In 1951, the net gain was 2,207.

The figures for Connecticut and Maryland include physicians licensed by the homeopathic medical examining boards of these two states. Those boards in Arkansas and Louisiana had no new licentiates in 1952.

In Minnesota, 351 new licenses were issued, 220 by examination and 131 by reciprocity endorsement. This compares with 1,581 issued in California, 1,292 in New York and more than 500 in Florida, Illinois, Ohio, Pennsylvania and Texas. Of the 132 graduates of the University of Minnesota Medical School, none failed to pass a state board or a national board examination.

Of the freshmen students who entered medical school for the 1951-1952 session, 5,249 (73.1

*Medical Licensure Statistics for 1952, Donald G. Anderson, M.D., Secretary, and Anne Tipner. J.A.M.A., 152:415 (May 30) 1953.

per cent) had baccalaureate degrees; 408 (5.7 per cent) had attended college four years but did not receive a degree; 1,437 (20.3 per cent) had had three years of college work and only 63 (0.9 per cent) had had only two years of college.

Minnesota is included among the nineteen other states, the District of Columbia and Alaska which require a Basic Science certificate before a candidate may take the state board examination. Certificates were granted to 5,730 candidates in 1952. Some 26.1 per cent of those who took the examination failed. Of the physicians, medical students and dentists examined, 12 per cent failed. Only 15.5 per cent of the osteopaths who took the Basic Science examination failed, whereas 65.1 per cent of the chiropractors and 55.2 per cent of the unclassified failed.

The certificate of the National Board is recognized by all medical licensing boards for registration by endorsement with the exception of Arkansas, Florida, Indiana, Nebraska and Texas.

The practice of medicine in any state is under the jurisdiction of the state board of medical examiners. These have been bending their efforts towards assisting foreign-trained physicians to locate in the United States. Forty-five boards now permit foreigners to take examinations, but under varying conditions. The Council of the Association of American Medical Colleges has prepared a list of fifty foreign medical schools whose graduates they recommend for consideration by the medical boards on the same basis as graduates of approved medical schools of this country. This list has proven of great value to the state licensing boards. Of the total number (1,208) of graduates of foreign medical schools 648 (53.7 per cent) passed the examination. The state boards are to be congratulated on the way they have been handling a difficult problem.

CANCER WARNINGS NOT OVERDONE

THE OTHER DAY a patient, whom I had seen off and on for a variety of complaints, consulted me about a lesion he had had behind the lobe of his ear for about two years. It was located where the tip of the ear-piece of his spectacles had been irritating him.

One glance at the rather extensive area of granulation-like tissue aroused my suspicions that here was skin cancer which had been allowed to progress for at least a couple of years.

The patient was a contractor and above average in intelligence and must have been exposed to the barrage of publicity which has been fired at the public in recent years about the signs and symptoms that should make one suspicious of cancer. A sore spot on the skin which fails to heal is on the list. How could one neglect an area like this man had for two years and allow it to reach a stage impossible to remove without producing extensive scarring and difficult to treat with x-ray—for it proved to be a squamous cell cancer.

Imagine my consternation when my patient told me he had consulted an aurist a year or so ago and had been assured the lesion was nothing that deserved any attention. That cast a different light on the picture. The aurist and not the patient was, therefore, the one most to blame for the neglect of this serious lesion. It seems unbelievable that any physician in this day and generation could fail to be suspicious of a skin lesion of this sort which had failed to heal after a matter of weeks. There is some excuse for failing to detect certain hidden cancers, but not skin cancers.

One can conclude, however, that the publicity campaign which is being conducted by the American Cancer Society and its subsidiaries and the life insurance companies and other agencies to draw attention to the signs of beginning cancer is not overdone, but that warnings to the public and also to the medical profession must continue to be offered again and again, if cancer is to be recognized in its early stages when it can be effectively treated.

In all the attention now being paid to chemotherapy, it should not be forgotten that bed rest is just as necessary as ever in the treatment of tuberculosis. All forms of collapse therapy are still useful in suitable cases. Whereas chemotherapy has not shortened the duration of hospital stay, it has helped the recovery of many patients who would otherwise have succumbed. The lives of many additional patients have been prolonged indefinitely, although the disease was not arrested.—WILLIAM S. SCHWARTZ, M.D., *The New England Journal of Medicine*, April 23, 1953.

* * *

BCG is harmless if prepared and used properly; it produces a certain degree of immunity, and it should be used to immunize the more vulnerable groups in the population. These groups are doctors, medical students and nurses; hospital and laboratory personnel; individuals unavoidably exposed to infection in the home; patients and employes in custodial institutions, and children and certain adults considered to have inferior resistance and living in communities where tuberculosis is unusually prevalent.—JAMES E. PERKINS, M.D., *Bulletin of the National Tuberculosis Association*, April, 1953.

The Dean's Page

UNIVERSITY HOSPITALS ADMISSION POLICY

The University Hospitals serve two distinct but inseparable functions, the provision of facilities for the instruction of medical students, interns, and fellows, the provision of medical care to a segment of the population of the state. Since many physicians, especially those who are graduates of medical schools other than the University of Minnesota Medical School, may not be entirely clear as to which patients are eligible for care at the University Hospitals, a brief discussion of our admission policies should be of interest and possibly of some help.

Patients referred to the University Hospitals or its Out-Patient Department are classified as follows:

1. *County.*—These are patients unable to pay for any portion of their medical care. Their expenses are shared equally by the county and the state. They must present county papers filled in by both their physician and their county commissioner (or his representative, i.e., the executive secretary of the welfare board).
2. *Per Diem.*—These are patients who cannot afford to pay for the services of both a private physician and a private hospital. When applying for either out-patient or hospital care, they must present a special form filled in by themselves and their family physicians. They are required to pay their clinic or hospital expenses only, no charge being made for the professional services of the staff. From the standpoint of money received by the hospitals, there is no difference between a county patient and a per diem patient.
3. *Private Patients.*—These patients, limited in number, are admitted as a convenience to the staff and as a service to physicians of the state. Each private patient is referred by letter from his physician to a specific member of the University Hospitals staff.

Our objective is to furnish the best possible medical care to all patients. Treatment, services, and privileges accorded to patients are identical whether they are admitted as county, per diem, or private patients. It should be emphasized that private patients of the members of our staff are seen by students, interns, and fellows and are considered to be "teaching cases" to the same extent that county and per diem cases are so considered.

In referring patients, you will be of great assistance to the patient and to the hospitals if you will consider his ability to take care of the expenses. Each new patient is interviewed with regard to his financial status and is placed accordingly into one of the above categories. Per diem and private patients should be prepared to make a substantial deposit on admission to the hospital. They are sent statements weekly and are expected to pay their bills in full on discharge.

The facilities of the hospital emergency room, W-212, are available on a twenty-four-hour basis for taking care of acutely ill patients. When such a patient is being sent in, an advance telephone call to the admitting physician in charge of the emergency room will often make it possible to handle the patient's problem most expeditiously.

Out-of-state patients should have a signed authorization from agencies if they are unable to manage the expense themselves. Definite arrangements should be made in advance for these patients since out-of-state cases are taken on the general services only if there are no Minnesota residents awaiting admission. However, at the present time there is no waiting list for admission to the hospital. Any patient who is eligible for care at the University Hospitals and who requires hospitalization can be promised early if not immediate admission.

Indigent patients living in Minneapolis and Saint Paul, as a rule, are eligible for care at Minneapolis General Hospital or Ancker Hospital. If there are special circumstances which make you wish to send a patient to the University Hospitals, certification should be sought in advance. Should you have any question concerning a patient's eligibility for admission or any aspect of his medical care, please feel free to communicate with the hospital administration or an individual member of the staff.

HAROLD S. DIEHL
Dean, Medical School, University of Minnesota

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

INCREASE NOTED IN MEDICAL EDUCATION FUND

New impetus to individual giving toward alleviation of financial stress of the nation's medical schools is seen in a recent report on contributions to medical education.

More than one million dollars has been donated to medical education by physicians in the United States since January 1, 1953. This increase is shown in reports released by the American Medical Education Foundation, indicating that approximately 11,000 physicians have contributed $800,000 to the Foundation since the first of the year. Also, records from thirty-three of the country's seventy-nine accredited medical schools indicate that 8,217 doctors have contributed $301,426.42 directly to their alumni organizations.

Although this number of physicians may seem a large amount, percentage-wise, the record is not so impressive. This group of contributors represents only 9.9 per cent of the nation's doctors. But it must be remembered that this 9.9 per cent have given over one million dollars to medical education.

If such a small percentage of the nation's physicians can give so generously, how much more would the fund swell if the percentage were to rise to 100!

STATE MEDICINE HAS ECONOMIC APPEAL

A slightly different slant on the reasons why socialized medicine appeals to some people, is seen in a recent editorial in the *Long Prairie Leader*. The emphatic point made by the paper is that economic aspects, as contrasted to political and social ones, are the basic considerations when it comes to deciding what type of medical care system America should have. The paper says: "People living in towns like Long Prairie where good hospital service is available at reasonable cost, do not realize what city folks are up against when family illness comes and hospitalization is necessary. It is a common expression among city folks that 'one serious illness with surgery and hospitalization means ruin for the head of the family.'"

Specialist and G. P.

Another point stressed is the rise of the specialist and the disappearance of the old-time general practitioner in the city. The editorial states:

> "In cities now it is almost impossible to have a doctor come to the house. This is one of the by-products of the specialist system. . . . Much of this is of course necessary and undoubtedly saves lives but the public is becoming increasingly suspicious that much of it is unnecessary and is actually an excuse for doubling the fee."

Reiterating the problem of costs for city folks in obtaining medical care, the editorial affirms that "hospital charges, specialist's fees, nurses, operating room expenses, drugs and other service costs have climbed alarmingly in recent years." All this helps get supporters for government interference in financing medical care. "It is true that wonderful advances have been made in the successful treatment of surgical and medical cases," the editorial goes on, "but the evidence multiplies that when the bill comes in, it usually makes a new supporter for the demand that the government get into the hospital and medical business."

An Urban Problem

The editorial concludes that the problem is very much a city one, "as the rural citizen still has access to the general practitioner who comes on call, knows a little about everything and does not have to have a hospital staff to assist him

with a case of bellyache. The movement for socialized medicine has its impetus in the cities, not the country."

AMA REAPPROVES MEDICAL EXPENSE DEDUCTIONS

The medical profession, together with insurance companies, underwriters and the noncommercial health insurance plans, has long realized the seriousness of the cost of the so-called "catastrophic illness." Changes in present insurance coverage are being worked out to help alleviate much of the financial hardship imposed by this type of illness.

Also, the medical profession is supporting related measures which will help ease this often heavy burden.

Official approval of the American Medical Association has been given once again to deduction of medical and dental expenses for income tax purposes.

Appearing before the House Ways and Means Committee, which is considering this measure, Dr. David B. Allman, member of the AMA Board of Trustees, reaffirmed the AMA's position of approval of such legislation. He said: "The principle involved in all of these measures (previous similar legislation) has been actively approved by the Committee on Legislation and by the Board of Trustees of the American Medical Association. Although no attempt has been made to work out the details of the formula to be applied, we are of the opinion that a greater measure of relief should be provided in this way for those individuals who have suffered from the financial burden resulting from the expense of a serious, long-term illness."

Notes Misconceptions

Dr. Allman pointed out that taken as a whole, medical costs are not out of line with other normal living expenses. He stated:

"Statistics presented by the United States Department of Labor for the third quarter of 1952 reveal that living costs have increased 90.8 per cent since 1935-39, while medical costs have increased only 65.5 per cent in the same period.

"In addition, it should be noted that recent surveys indicate that only 3 per cent of American families have medical bills over $200 and that 80 per cent have no medical debts of any kind. Despite this fact, it is realized that a serious long-term illness can be a financial catastrophe to almost any family."

Dr. Allman's testimony before the committee also emphasized that for some time several insurance companies have been experimenting in a relatively new form of insurance called, among other titles, "medical disaster" or "catastrophic" coverage. "A few of the agencies established by medical associations are also underwriting this newer version of protection," he added. "Its purpose is to provide sound protection in those instances requiring long-term or high-cost treatment. These ventures are being undertaken with the knowledge and full support of the medical profession."

After recounting the unparalleled growth of voluntary health insurance in America, and averring that both insurance agencies and physicians are attempting to improve that phenomenal growth in coverage, Dr. Allman concluded:

"We believe that the enactment of legislation of this type will further encourage the improvement of existing plans, will extend coverage and help to eliminate or reduce the financial burdens which do exist as a result of illness. It will also encourage people to look after their own health rather than turn to the government for assistance. We are seriously convinced that our present non-governmental system of medicine not only provides the best care but that it is also the most economical. We are therefore in accord with any legislation designed to help preserve that system."

SOCIAL SECURITY SYSTEM HIT BY SENATOR BRICKER

Senator John Bricker of Ohio recently defined the proper role of the federal government in the social security field. Speaking at an insurance luncheon at the annual meeting of the Chamber of Commerce of the United States, Senator Bricker said, "The Federal Government has a definite part to play in meeting social problems, but this role should be clearly defined, kept within its proper limitations and safeguarded against those who would assign the Federal Government to a much larger role in this field."

Defining the fields wherein the federal government can properly work, Senator Bricker noted that social security "is an appropriate field for" and the primary responsibility of the federal government, but, he emphasized that unemployment compensation "should be made even more completely the responsibility of the several states," that elementary education should be left under the control of local governments, and that

government should be kept out of the field of medical care.

Study Shows Promise

Senator Bricker further stated that the current study of the present system by a House Ways and Means subcommittee "will lead to a much improved system of social security." But he declared that "recognizing the government's role in this field does not imply blanket endorsement of the present Old-Age and Survivor's Insurance Program. Our present social security system is riddled with windfalls, arbitrary exclusions from coverage, inequities and financial madness."

HEALTH INSURANCE BOOK AVAILABLE FROM AMA

The American Medical Association's Council on Medical Service and the Committee on Prepayment Medical and Hospital Service have recently issued a late account of health insurance plans in America. The booklet is the seventh annual revision of the health insurance brochure which is called "Voluntary Prepayment Medical Benefit Plans."

The brochure carries a great deal of information about such insurance plans in the nation. Each plan is described by summary of benefits, enrollment at the end of 1952, and other information. There is a separate section listing plans by type of sponsorship, and also identified are those plans having been granted the Council's seal of acceptance. In addition, other types of programs are described to give examples of voluntary methods of insuring some of the costs incident to health care. Single copies are available without charge from the Council on Medical Service of the AMA.

INTERNATIONAL CERTIFICATES OF VACCINATION

A revised immunization form required for international travel is now available, according to the U. S. Public Health Service, Department of Health, Education, and Welfare. However, the old certificate will be acceptable in international travel until the expiration date of recorded vaccinations.

The new form, entitled International Certificates of Vaccination, provides travelers with a record of compliance with vaccination requirements acceptable to all nations governed by the International Sanitary Regulations now in effect. It is written in both English and French, but entries may be made in any language. The form contains vaccination certificates for smallpox, yellow fever and cholera, and space to record other immunizations.

After July 14, 1953, copies of the "Certificates" will be distributed with all passport applications issued by clerks of the court in any city and by the passport agencies of the State Department in Boston, New York City, San Francisco, New Orleans, Chicago, and Washington, D. C. The form may also be obtained from local or State health departments, or from facilities of the Public Health Service. The Superintendent of Documents, Government Printing Office, Washington, D. C., has the form on sale for 5c a copy or $2.50 a hundred. Persons traveling to countries where passports are not needed, but where immunization is required, may obtain the form from these same sources. Travel agencies, steamship lines, airlines, and other transportation companies will be given permission to reprint the form upon request to the Division of Foreign Quarantine, Public Health Service, Washington, D. C.

In accordance with the revised International Sanitary Regulations, the new "Certificates" require that the results of only the primary vaccination for smallpox be recorded. In the case of revaccination, the smallpox certificate becomes valid immediately, whereas previously a fourteen-day wait was required.

The cholera certificate becomes valid six days after the first injection. Previously, the entire series had to be completed before the certificate became valid. Travelers are cautioned that the type of vaccine used in this country provides maximum protection only after the second injection. Therefore, it is advisable to take the second inoculation.

The Public Health Service urges travelers to be sure that their smallpox and cholera certificates are properly stamped by the certifying health officer with an official stamp. The signature of the health officer, alone, does NOT make the certificate valid. If the local health officer is not equipped with an identifying stamp, undoubtedly the State Health Officer will be able to validate the certificate. Officers of the Public Health Service and Medical Officers in the Department of Defense may certify these certificates also.

As provided by the regulations, the new certificate for yellow fever vaccination is valid for six years instead of four years. As before, yellow fever vaccination certificates are valid only when the inoculation is obtained from a yellow fever vaccination center designated by the U. S. Public Health Service. The international regulations require a nation to designate specific vaccination centers for this purpose.

Agencies having a supply of the old form may continue to distribute it until their stock is exhausted. However, when the old certificate is used, it is necessary to follow the requirements of that form for smallpox vaccination. In the case of yellow fever and cholera vaccinations, the new regulations may be applied.

Under the International Sanitary Regulations, the Department of Defense will issue its own certificate to military personnel on active duty; however, military dependents must continue to use the international vaccination certificate.

AMERICAN MEDICAL ASSOCIATION

House of Delegates—Résumé of Proceedings

New York City—June 1-5, 1953

The aspirations and ideals of American medicine, its hopes and fears and its enormous accomplishments passed in review once more as delegates to the American Medical Association thrashed out their problems in their 102nd annual session, June 1 to 5, in New York City.

Implicit in all of the resolutions introduced, in the lively deliberations of committees, and in discussions on the floor of the House, was the staunch attachment of the American doctor to freedom for himself and for the institutions of education, research and patient care which he has built. Also, his reasoned fear of anything approaching government controls which might threaten the high standards of education and practice built up in the climate of freedom over the years.

Among the issues presented for discussion and final determination, the expansion of government medical care for veterans loomed large; also the problems involved in financing medical education, and the relationship of the whole government social security program to the private practice of medicine, now and in the future. The sharp necessity for defining relationships between physicians and the governing boards of hospitals where they practice was considered at length.

There were other acute day-to-day problems to be explored such as the nursing shortage, the allocation of interns and residents with an eye, on the one hand, to their further education and, on the other, to the needs and rights of the smaller non-teaching hospitals.

Ethics Discussed

There were ethical and disciplinary problems to be thrashed out, especially in relation to public criticism leveled at doctors by the governing board and the director of the American College of Surgeons. There was the need for re-evaluating and adjusting old relationships between medicine and its auxiliary professions and between medicine and dentistry. There was also a demand of surprising vigor on the part of a few to change the relationship between medicine and osteopathy in its modern form.

All these and many other matters came before the delegates, some of them with as many as ten or eleven resolutions from as many state associations on the same subject matter. Differences of opinion were not lacking. The end result in each case, however, was a tempered and considered decision reflecting sober judgment and steady statesmanship on the part of the delegates as well as the reference committees involved.

Several resolutions were submitted at this meeting calling for a complete definition of the responsibility of the government in the medical care of the citizen. They closely followed a resolution to the same effect which had been introduced at the Denver Clinical meeting and referred to the Board of Trustees. The importance of such a definition, not only to medicine but to the future of all Americans, had been underlined by President Eisenhower who forecast in his message to Congress, appointment of a President's Commission to study the "whole question of federal control of activities to which the federal government contributes." Also by the bill introduced as House Joint Resolution 123, in the Congress, for an amendment to the Constitution prohibiting the United States government from engaging in any business not specified in the Constitution.

With such congressional and executive studies pending, the Board of Trustees recommended, and the House approved, continued study of the whole problem by the Committee on Federal Medical Services and its subsidiary Committees on Indigent Medical Care and on Maternal and Child Care with a report to be delayed until findings of the President's Commission may be available.

Children's Services Reviewed

In this connection, the action taken with respect to the Crippled Children's Services, financed jointly by the states and the federal government, might well be explained, in view of the scathing editorial on the subject printed in a recent *Life* magazine. The resolution, introduced by Dr. Cleone A. Nafe of Indiana, called attention to the fact that diagnostic services, under the plan must be made available within the area served by each diagnostic center to "any child (a) without charge, (b) without restriction or requirement as to the economic status of such child's family or relatives or their legal residence, and (c) without any requirement for the referral of such child by any individual or agency." The resolution asked, and the House approved, that the Board of Trustees work through whatever channels might be necessary to eliminate this section of the regulation. It called attention to the fact that a state which might institute a means test would have no federal funds allotted to it for crippled children's services. The resolution did not ask for elimination of free services to children who need them, as the *Life* editorial declared with considerable venom.

Another resolution with comparable objectives

was recommended and passed to the effect that people who are able to do so be asked to pay for gamma globulin which, according to present plans of the National Foundation for Infantile Paralysis, will be distributed free of charge in polio-threatened areas. *Life* magazine failed to pick up this action along the same lines whose object was, of course, to preserve the money for polio research and for aid of afflicted patients. The Board will urge this course upon the National Foundation, in accordance with the resolution.

Actually, of course, *Life* did not initiate the current ground swell of public criticism of physicians. No less than 11 resolutions, of which the resolution adopted by the Minnesota State Medical Association's House of Delegates was one, were introduced on this subject. They came from all parts of the United States and most of them, like the Minnesota resolution, adopted by our House of Delegates in May, called such public remarks as those of Dr. Paul R. Hawley, director of the American College of Surgeons, irresponsible and unjustified, condemned them in fact and in principle and urged the American Medical Association to do everything in its power to curb such actions in the future. Several resolutions also urged appropriate councils of the association to establish billing procedures for all physicians acting jointly in the care of a single patient so as to assist in the handling of fee-splitting, one of the major charges made by Dr. Hawley.

The Reference Committee on Legislation and Public Relations considered these resolutions, the ethical problems involved and the violations of ethical principles cited particularly by Dr. Hawley and the governing board of the College of Surgeons. The conclusion of the committee's report, in which the House of Delegates concurred, follows:

"Your reference committee claims no originality in stating an opinion often expressed by official spokesmen for the American Medical Association that some doctors of medicine violate the Principles of Medical Ethics. The committee believes that this involves relatively few physicians and that the geographical distribution is spotty. Human nature being what it is, this will probably always be true. The method evolved for dealing with the problem of unethical conduct and practices by the American Medical Association, while far short of perfection is still the best and most practical means of correcting these abuses and safeguarding the best interests of the public. This method is being and will continue to be followed. Dr. McCormick in his inaugural address called on constituent associations to become increasingly vigilant and aggressive in the pursuit and correction of abuses. Many of his predecessors have emphasized this continued need which is and always will be present, since doctors are subject to the same weaknesses of flesh and spirit as are other persons.

"The American Medical Association must now and in the future always continue to enunciate to its members and to the public its stand on matters pertaining to abuses and evils in the practice of medicine. A positive public relations program must be maintained pointing out the good things the members of the American Medical Association are doing to promote the public health and welfare of the citizens of this country."

The requests for development of approved methods of joint billing were referred to the Judicial Council for further study.

In connection with efforts now being made in local associations all over the country to maintain active committees to investigate, pass upon and, if necessary, discipline members for unethical practices, considerable attention was given to the name by which such committees should be known. The name "mediation committee" was suggested and approved by one reference committee and the delegates. But the Council on Medical Service reported, on the basis of a study, that the name "Grievance Committee" was the most frequent and the most popular name, even among the larger state and county societies. The Council therefore reported that, while it was in agreement with the House that the American Medical Association should not dictate in such matters, the name "Grievance Committee" would continue to be used by the Council in all its own dealings with such organizations.

VA Care Defined

Action was finally taken by the delegates at this meeting on the heated and controversial question of medical care for non-service-connected disabilities in veterans' hospitals. The action taken was the one proposed, after careful study, by the Committee on Federal Medical Services at the Denver Clinical meeting last December. It called upon Congress and the Veterans' Administration to limit medical care and hospitalization benefits in Veterans' Administration and other federal hospitals to the following categories:

(a) Veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated; and

(b) Within limits of existing facilities to veterans with wartime service suffering from tuberculosis or psychiatric or neurological disorders of non-service-connected origin, who are unable to defray the expenses of necessary hospitalization.

It was recommended and approved, further, that provision of medical care and hospitalization in Veterans' Administration hospitals for the remaining groups of veterans with non-service-connected disabilities be discontinued and that the responsibility for the care of such veterans revert to the individual and the community where it rightfully belongs.

Postponement last December was agreed upon after heated discussion in order that representatives of the American Medical Association, the veterans' organizations, the American Dental and Hospital Associations, the Department of Defense and the Veterans' Administration might have a chance to meet and perhaps agree on the data to be considered, if not on a solution to the problem. The Board of Trustees accordingly appointed a

liaison committee of which Dr. Edwin S. Hamilton was chairman, to meet with representatives of the other groups named. There were several hours of open hearings in which the committee reported that all interested groups had a fair and full hearing. It was the opinion of the committee that no substantial inaccuracies were developed in the original special committee report. Although representatives of other groups asked that the report be rejected and that further meetings be held, the action taken followed the recommendation both of the Committee on Federal Medical Services and the Liaison Committee appointed by the Board.

Remarks by Mr. Louis K. Gough, Commander of the American Legion, who addressed the delegates in the course of the session, clearly indicated the dissatisfaction of veterans' organizations and the other groups with the decision of the delegates. Mr. Gough declared that abuses of the current entitlement to medical and hospitalization are negligible. He expressed disappointment that the meetings between the organizations involved had not been organized on a more permanent basis so that they might meet regularly and so erase evident misconceptions in the facts. He also cited some Legion studies now under way which he hoped the doctors would examine.

The close vote on a bill introduced in Congress subsequently to limit medical and hospital service for non-service-connected disabilities might well be regarded as a reflection of the action taken by the delegates in New York. The fact that many Congressmen reversed themselves on a later vote showed no doubt of the soundness of such a limitation but rather the force of veteran opinion to which they are all acutely sensitive.

Clarify Intern Program Rules

The whole problem of intern distribution and the qualification of hospitals for intern training was the subject of a variety of resolutions reflecting the scarcity of interns in general and the difficulties encountered by small hospitals in maintaining standards and attracting interns. Careful and detailed reports on the requirements and working, to date, of the revised "Essentials of an Approved Internship," first submitted in 1952 and approved for use in December, 1953, showed to the satisfaction of the House of Delegates that many of the criticisms voiced at this meeting were not justified. On the other hand, it was decided because of the dissatisfaction shown in reference committee hearings, first, that the rule be abolished whereby approval may be withdrawn for an internship program which for two consecutive years fails to obtain at least two-thirds of its slated complement of interns and, second, that further study be continued by a committee appointed by the Speaker of the House of Delegates, at least half of whom are to be doctors in private practice not connected with medical schools or affiliated hospitals.

The so-called "Matching Plan" for apportioning interns came in for criticism, too. This plan functions through an independent agency made up of equitable representation from the American Medical Association and the various hospital associations. Its objective is to act as a clearing house for applications for internships. The resolution asking for its abolishment was rejected but another condemning the "interference of teaching institutions with the operation of the plan" was given serious consideration and it was decided to request a restudy of its function by the agency with a view to implementing improvement.

The report of the Commission for the Improvement of Care of the Patient incorporated an eight-point program for improvements in nurse accreditation which was adopted in toto by the House. This program was submitted to the delegates in December and referred to the Board of Trustees for submission to the above committee for further study and consultation with the director of the Accreditation Program of the National League of Nursing. It provides for a number of constructive changes in current practices, notably a reduction of the present three-year program for diploma training, to two years: also, a chance for advancement, in selected cases, from trained practical nurse status to hospital diploma courses, and from hospital diploma status to collegiate degree courses.

Essentials for training of Medical Record Technicians, as distinguished from Medical Record Librarians, with more flexible and less demanding standards, were provisionally approved so that schools may be established as outlined next September. Further consideration and final action on the program was postponed until next December, however, when members will presumably have had time to study the program.

The problem of the relationship of the dental surgeon to the surgical service of a hospital was left over for study, also, from the December session. The final recommendation adopted at this session was the result of considerable consultation with the American Board of Oral Surgery (dental), the American Dental Association and the American Hospital Association. It reads as follows:

"The position adopted by the representatives at the meeting on March 21 was to the effect that the oral (dental) surgeon be assigned to a surgical service of a hospital and to perform such professional duties as the chief of the surgical service directs. The members of the American Board of Oral (dental) Surgery stated that this plan was fully satisfactory." Of interest in connection with this action is the definition of a dental-oral surgeon which was incorporated in the report and adopted. According to this definition "dental-oral surgery is to be limited to diseases of the teeth and

jaws and lesions of contiguous soft tissues related to diseases of the teeth and jaws but excluding malignancies."

Hospital Relations Integrated

The over-all problem of medical-hospital relationships was considered at length by a Joint Committee of the Board of Trustees of the American Medical Association and the American Hospital Association and its recommendations to the delegates were adopted. These recommendations provide, in general, for closer integration between the medical staff, the administrative staff and the governing board of the hospital to the end that hospitals and physicians may aid each other in the delivery of the best possible care to the patient. It is the belief of the committee that mutual understanding will eliminate criticism and irritation between members of the hospital governing board, the medical staff and the administrator. It will also eliminate interference of administration in purely medical problems.

Two other resolutions on relationships in and out of the hospitals were submitted to the Board of Trustees for further study. One dealt with relationships to nonprofessional workers in the health field, the other with relationships to auxiliary workers in the field of medicine.

Warm Debate on Osteopathy

Still another problem in relationships developed considerable discussion and some difference of opinion. This one involved the relationship between medicine and osteopathy and the committee appointed by the Board of Trustees after the December meeting to study the matter, submitted an extensive report, including the history of osteopathy, current educational standards and requirements all over the country for admission to practice. In view of its findings, the committee, of which Dr. John W. Cline is chairman, made some radical recommendations which were not accepted by the Reference Committee. At the request of the Board of Trustees the Reference Committee recommended that "because of the length of the report and the controversial nature of the subject, the Board feels that the House should have adequate time for study and that the state associations should have an opportunity to express their opinions. Therefore it is recommended that the committee be continued but that action on the report be deferred until the June, 1954, session." Meantime, it was suggested that the House be prepared to answer the following questions:

1. Should modern osteopathy be classified as "cultist" healing?
2. Should doctors of medicine teach in osteopathic schools?
3. Should the relationship of doctors of medicine to doctors of osteopathy be a matter for determination by the several state associations?

A minority report of the reference committee, stressed improvement of the health of the American people as a consideration and the need for realistic leadership from the American Medical Association. It proposed immediate action instead of postponement for study, asked that doctors of medicine assist in elevating educational standards in osteopathic schools and that relationships be left for determination of the states.

Education in the specialties came in for attention in several quarters. Principally, critics of current procedure desired more representation on the specialty boards for men in practice and not allied with teaching institutions. They also desired more training in general practice for candidates for certification in the specialties. These matters will be studied further. The special committee appointed in December at the instance of Past-President Louis H. Bauer to study the possibility of requiring a period in general practice for all candidates in the specialties, was authorized to continue its investigation of the matter with a view to reporting next year.

Medical Education Fostered

The problem of financing medical education was discussed at length by Dr. Elmer L. Henderson, director of the American Medical Education Foundation and by Dr. Frank H. Lahey, trustee of the National Fund for Medical Education and a past president of the association, who until his recent death, was chairman of a special committee to solicit businessmen and organizations for funds. Dr. Lahey reported with enthusiasm on the response of business and industrial leaders to the appeal to keep medical education free of federal controls and subsidies. He estimated that doctors and their friends had given more than three million dollars (including direct alumni donations) for that purpose in the last three years as against an estimated deficit of 10 million dollars incurred annually by the schools.

Dr. Henderson reported that $906,000 has been contributed to the Foundation in 1951 and 1952 and that the number of contributors increased from 1,876 in 1951 to 7,259 in 1952, an increase of 287 per cent. The Foundation has turned over in excess of $1,650,000 to the National Fund for Medical Education which in turn made grants to each of seventy-nine approved medical schools of more than $2,918,000. The total amount raised and transferred in thirty months was $2,650,000. The goal in 1953, he said, is more than $2,000,000 and for this purpose the American Medical Association has already voted one half million to seed the campaign.

Most states are campaigning actively for the fund, according to Dr. Henderson's report. Indiana has given the largest amount per member but Nebraska raised $49,146 in cash and pledges in one month, with a doctor population of only 1,300. On the other hand, Illinois has voted to

assess each member $20 a year for the fund, the first state to institute such an assessment. Among outstanding individual gifts to the fund was the contribution of $10,000 from the Auxiliary to the American Medical Association; also the $21,500 raised by one state committee of the Auxiliary and turned over to the Foundation.

Changes in By-Laws Voted

Four changes in the By-Laws pertaining to membership were adopted virtually as proposed by the Council on Constitution and By-Laws of which Dr. Louis A. Buie of Rochester, Minnesota, is chairman. The first specifically limited members to one type of membership at a time. Two others made it explicit that requests for exemption from payment of AMA dues must be transmitted through the constituent association to the Secretary of the American Medical Association. The third provides that "members temporarily in the Armed Forces may be excused from payment of AMA dues regardless of local dues exemption, for the period beginning January 1 or July 1 following date of the member's entrance into service."

Other changes adopted had to do with clarifying rules governing minority reports from reference committees and routine procedure of the reference committees. Also, a resolution requiring the Board of Trustees to appropriate money to provide sufficient funds, within the means of the Association to implement any policies, programs or measures adopted by the House of Delegates. This resolution which was adopted at the December meeting and referred to the Council was resubmitted to the delegates with a significant change. The altered statement was adopted for incorporation in the Constitution and By-Laws as follows:

"All resolutions and recommendations of the House of Delegates pertaining to the expenditure of funds shall be referred to the Board of Trustees which shall determine if the expenditure is advisable. If it is decided that the expenditure is inadvisable, the Board shall report, at its earliest convenience, to the House of Delegates, the reason for its action. This procedure conforms to the statutes of the State of Illinois under which the American Medical Association is incorporated."

Important among changes in the By-Laws govering membership proposed at this session was the Minnesota resolution asking that payment of dues for the current year be sufficient, without payment of any back dues, in the event that a constituent state association should make annual payment of American Medical Association dues a requirement for membership in its association. This resolution was introduced at the direction of the Council by Dr. George Earl, Minnesota delegate, and the recommendation of the Reference Committee on Amendments to the Constitution and By-Laws which follows, was adopted by the delegates.

"Your committee approves this resolution in principle," the committee said. "It believes that when a state association makes it mandatory to belong to the American Medical Association in order to be a member of the state medical society, then this provision of the resolution is sound policy. We do, however, believe that the various state medical associations should have time to study this resolution. We have been advised that some legal problems may arise at the state level. Your committee therefore recommends that copies of this resolution, with a copy of the remarks of the committee, be sent to the individual state medical societies and that this resolution be considered at the December, 1953, interim session of the House of Delegates."

Another change referred to the Council on Constitution and By-Laws for implementation concerned disciplinary action for members over whom county and state societies have no original jurisdiction. This amendment would provide that the Judicial Council, after due notice, and hearing could censure, suspend or expel any Service, Affiliate or Honorary member of the Association for an infraction of the Constitution and By-Laws or for a violation of the Principles of Medical Ethics. This action would bring many of the more vitriolic critics of medicine under direct disciplinary action of the Judicial Council.

Revision of the Principles of Medical Ethics is under way, as ordered in June, 1952, the Council reported, and a new preamble and conclusion were approved as submitted at this session.

The doctor-draft law, which was in the process of enactment by Congress at the time of the meeting received remarkably little attention at the New York session. One resolution bearing upon its operation was referred to the Council on National Emergency Medical Service for further study. This resolution asked that the opinion of the state medical advisory committee on the essentiality of a doctor be made final, in case of a dispute between local draft boards and committees.

It is obviously impossible in this résumé to describe or even mention all of the other actions and reports—some of them of great importance—at this meeting. For example, an exhaustive report was submitted by the Committee on Blood, on blood collection and banking all over the country which should be read in its entirety in the printed proceedings published in the June 27 issue of *The Journal of the American Medical Association*. In that connection, it is interesting to note that the Board of Trustees has taken under advisement for special study a plan proposed by California for establishment of a coordinated national blood bank program to be operated by the American Medical Association, the American Red Cross and other qualified agencies.

Other notable events of the proceedings included election of Dr. Alfred Blalock of Baltimore for the Distinguished Service Award. Also the presentation in person of the 26 millionth

subscriber to Blue Shield, Mr. William P. Markham of Louisville, Kentucky.

Approve Bricker Resolution

The delegates also went on record in unanimous support of S.J. No. 1, the so-called Bricker resolution, which calls for an amendment to the Constitution limiting the treaty-making power of the executive and requiring that no treaty or executive agreement be made which conflicts with any provision of the constitution or which operates to regulate any of the purely domestic affairs of the United States.

Addresses of the president, the past president and the Speaker, always highlights of the proceedings, should be read carefully as printed in the June 20 issue of *The Journal*. Nine points emphasized by the new president, Dr. Edward J. McCormick, who took office at this meeting, constitute a sound and well-considered program for medicine all over and undoubtedly rate a brief capitulation here. Dr. McCormick urged the following upon all societies: active measures to promote proper distribution of doctors; 24-hour emergency call services for physicians everywhere; strong, fearless mediation committees to hear patient complaints; clarification of physician-hospital relationships by county and state medical societies; active development of voluntary health insurance by every county society; participation by individual physicians in all community affairs; better public relations by every physician in his own office including the utmost care to avoid overcharging, rudeness, and excessive waiting in the doctor's office; a closer contact between county and state societies and writers for press, radio and television; greater unity within the profession which should work as a team at all times, even when, as now, part of the pressure involved in the immediate threat of compulsory health insurance is off.

Officers, Guests Speak

As most people are already aware, the new President-Elect, chosen at this meeting, is Dr. Walter B. Martin of Norfolk, Virginia. The Vice President is Dr. Carl H. Gellenthien, Valmora, New Mexico. Dr. George F. Lull of Chicago, continues as Secretary, Dr. J. J. Moore as Treasurer and Dr. James R. Reuling of Bayside, New York, as Speaker of the House of Delegates, a post which he filled, as before, with admirable wisdom and fairness. Dr. Edwin S. Hamilton of Kankakee, Illinois, and Dr. Gunnar Gundersen of La Crosse, Wisconsin, were re-elected to the Board of Trustees. Dr. Julian P. Price, Florence, South Carolina, was elected to fill the unexpired term of Dr. Walter B. Martin.

Among the distinguished guests who addressed the delegates were two women of note, Mrs. Oveta Culp Hobby, already confirmed as Secretary of the new Department of Health, Education and Welfare, and Mrs. Ivy Baker Priest, Treasurer of the United States.

Doctors present were particularly interested in Mrs. Hobby's outline of what constitute "indispensable social services which serve the public health of the nation without affecting the doctor-patient relationship in medical practice."

They are, briefly: prevention of disease; medical research, the increasing cost and scope of which make it a field in which government support is increasingly sought; rehabilitation and restoration of the disabled in which private agencies work closely with government agencies and medical education. Local governments, with the private assistance of medical organizations, must meet an overwhelming deficit in funds if medical education is to be kept on a high level, Mrs. Hobby said.

One other point which greatly interested the delegates, the name of the Special Assistant for Health and Medical Affairs who is to serve in her department, was not disclosed by Mrs. Hobby. (Dr. Chester-Keefer of Boston was recently confirmed for this post.)

St. Louis has been selected for the December Clinical session; the 1954 meeting will be in San Francisco and the 1955 session in Atlantic City. Invitations were received from both Chicago and New York for the session of 1956. Decision awaits the progress both cities hope for in building new convention halls with adequate facilities.

GEORGE EARL, M.D.
F. J. ELIAS, M.D.
J. A. BARGEN, M.D.
O. J. CAMPBELL, M.D.

However accurately we carry out the health examination of the community, we cannot expect to achieve complete victory over infection until the public itself has become better informed. It sometimes happens that an infectious form of primary pulmonary tuberculosis runs such a rapid course that others have been infected long before the next scheduled examination. A flare-up of an older tuberculous infection may also occur rapidly. Such cases are, however, not common and the patient is brought to bed very soon. In many cases the ignorance and asocial, sometimes antisocial, attitude of the sources of infection have contributed to the spread of infection.—TOBIAS GEDDE-DAHL, M.D., *The American Journal of Hygiene*, September, 1952.

Clinical Results* with Banthine® Bromide

(Brand of Methantheline Bromide)

22 Published Reports Covering Treatment of 1443 Peptic Ulcer Patients with Banthine

Comprising the reports published in the literature to date which give specific facts and figures of the results of treatment

AUTHORS	No. of Patients	Chronic, Resistant to Other Therapy	TYPES OF ULCERS				RELIEF OF SYMPTOMS (Chiefly Pain)				Surgery or Complications[1]	Side Effects Requiring Discontinuance of Drug[2]	EVIDENCE OF HEALING			
			Duodenal	Jejunal	Stomal	Gastric	Good	Fair	Poor	No Report			Complete	Moderate	None	No Report
Grimson, Lyons, Reeves	100	100	93	7			80	11	4		5		47		19	29
Friedman	15	15	14			1	5		4	6[3]			2			13
Bechgaard, Nielsen, Bang, Gruneland, Tobiassen	26	26	21			5	16	4	6				8	6	12	
McHardy, Browne, Edwards, Marsh, Ward	162		162				136	12	11		3	1	14	9	7	129
Segal, Friedman, Watson	34	34	34[4]				14	13			7	2	5		8	14
Brown, Collins	117	99	117				97	7	8		5	8	55	9	8	40
Asher	77		65		7	5	52	9	16			16		9	21	47
Rodriguez de la Vega, Reyes Diaz	5	4	5				4		1					3	2	
Winkelstein	116	116	102	8		6	102		14				53		18	45
Hall, Hornisher, Weeks	18	18	18				11		1	6[5]			18			
Maier, Meili	38	38	24			14[6]	27	7	4[7]				10	2	5	21
Meyer, Jarman	25	18	25				21		4							25
Poth, Fromm	37	37	37				33	3	1				33	3	1	
Plummer, Burke, Williams	41	41	41				36		5				38		3	
McDonough, O'Neil	104	100	104				63	10	31			11	4		11	89
Broders	60	60	58		1	1	35	19	6				10	1	49[8]	
Legerton, Texter, Ruffin	11		11				11									11
Holoubek, Holoubek, Langford	76	69	76				35	27	10		4	10	26		10	36
Ogborn	42		39	2		1	42[9]									42
Shaiken	48	48	48				33	10	3		2		33	10	3	
Johnston	145	145	145				143		2			2	143		2	
Rossett, Knox, Stephenson	146		141			5	146					4[10]	53			93
TOTALS	1443	968	1380	17	8	38	1142	132	131	12	26	54	552	52	179	634
PERCENTAGES		67.8	95.6	1.2	0.6	2.6	81.3	9.4	9.3			3.7	70.5	6.6	22.9	

1. Not included in tabulations.
2. Included in "Relief of Symptoms" as "Poor" and in "Evidence of Healing" as "None."
3. Four had no symptoms when Banthine therapy was begun.
4. Of which seven were penetrative lesions and five partially obstructive.
5. No symptoms were present in four.
6. Two with symptoms only; no demonstrable ulcer.
7. Three were psychopathic patients and one had a ventricular ulcer of the lesser curvature.
8. Roentgen findings after treatment period of two weeks; forty-seven had duodenal deformity.
9. All returned to work within a week.
10. In these four, after relief of symptoms, Banthine was discontinued because of urinary retention.

During the past three years, more than 250 references to Banthine therapy in peptic ulcer and other parasympathotonic conditions have appeared in medical literature. Of these reports, 22 have presented specific facts and figures on the results of treatment in a total of 1,443 peptic ulcer patients, 67.8 per cent of whom were reported as chronic or resistant to other therapy. These results are tabulated above and show:

"Good" relief of symptoms was obtained in 81.3 per cent of the 1,405 patients on whom reports were available.

"Complete" evidence of healing was obtained in 70.5 per cent of the 783 patients on whom reports were available.

In all but 9.3 per cent, relief of pain was "good" or "fair." In all but 22.9 per cent, evidence of healing was "complete" or "moderate."

During treatment, 26 patients required surgery or developed complications other than ulcer which required discontinuance of the drug before results could be evaluated.

Of the remaining 1,417 patients, only 3.7 per cent experienced side effects sufficiently annoying to require discontinuance of the drug.

*Volume containing complete references, with abstracts of 39 additional reports, will be furnished on request by

G. D. Searle & Co.
P. O. Box 5110, Chicago 80, Illinois

✦ Reports and Announcements ✦

NORTHERN MINNESOTA MEDICAL ASSOCIATION

The annual meeting of the Northern Minnesota Medical Association will be held in Fergus Falls, Friday and Saturday, August 28 and 29, 1953. The annual banquet will be held Friday evening, August 28. The program for the two days is as follows:

Friday, August 28, 1953

Morning Session—10:00 A.M.

"Management of the Neurogenic Bladder."
HAROLD WALDER, M.D., Duluth, Minnesota
"Treatment of Poliomyelitis."
JOSEPH P. ENGEL, M.D., Minneapolis, Minnesota
"Antibiotics in the Management of Staphylococcal Sepsis."
ROBERT I. WISE, M.D., Minneapolis, Minnesota
"Present Status of Drug Therapy in the Treatment of Allergic States."
FREDERICK W. WITTICH, M.D., Minneapolis, Minnesota

Luncheon and Business Meeting—12:30 P.M.
Hosts: Park Region District and County Medical Society

Afternoon Session—2:00 P.M.

"Fluid and Electrolyte Balance"
ARTHUR H. WELLS, M.D., Duluth, Minnesota
"Diagnosis and Treatment of Tumors of the Skin and Oral Cavity."
LYLE J. HAY, M.D., Minneapolis, Minnesota
"Aids in Foreseeing Obstetric Difficulties."
BRUCE WILLIAMS, Duluth, Minnesota

Annual Banquet—6:30 P.M.

G. J. MOURITSEN, M.D., Fergus Falls, *Presiding President, Northern Minnesota Medical Association*
Remarks—O. J. CAMPBELL, M.D., Minneapolis *President of the Minnesota State Medical Association*
"Some Historical Facts and a Tribute"
L. H. RUTLEDGE, M.D., Detroit Lakes, Minnesota
Remarks—JUSTUS OHAGE, M.D., St. Paul *President-Elect Minnesota State Medical Association*
Address—"European Travels—Some Observations"
FREDERICK W. WITTICH, M.D., Minneapolis, Minnesota

Saturday, August 29, 1953

Morning Session—9:00 A.M.

Clinico-Roentgen-Pathological Conference
Led by HENRY G. MOEHRING, M.D., Duluth, Minnesota, assisted by those presenting material and cases.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The annual meeting of the Southern Minnesota Medical Association will be held at St. John's Catholic School, Mankato, Minnesota, Monday, September 14, 1953. The program will be as follows:

Monday, September 14, 1953

St. John's Catholic School

Registration—8:00 to 9:00 a.m.

Morning Session—9:00 to 12:00 Noon

"A Survey of Small Intestinal Obstruction in a Small Group Practice."
JOHN C. MICKELSON, M.D., Mankato
"Regional Enteritis: Present Opinions Regarding its Treatment."
S. R. MAXEINER, M.D., Minneapolis
"Fluid Regulation in Nephritis and Nephrosis in Childhood."
E. C. BURKE, M.D., Rochester
"The Intervertebral Disk Problem in the Teen Age Group."
D. R. LANNIN, M.D., Saint Paul

Intermission

"Hazards of Arsenic in the Treatment of Asthma."
L. E. PRICKMAN, M.D., Rochester
"Injection Therapy of Varicose Veins Using Sylnasol Foam, Complications, Indications, and Contraindications."
H. A. ALEXANDER, M.D., Minneapolis
"Chemotherapy of Leukemia and Lymphosarcoma."
J. M. STICKNEY, M.D., Rochester

Luncheon Meeting—12:15 to 2:00 p.m.

Bethlehem Lutheran Church

Afternoon Session—2:00 to 5:00 p.m.

St. John's Catholic School

Case Report: "Acute Cervical Tumor in Mental Defective."
HEINZ BRUHL, M.D., Faribault
Case Report: "Stromal Endometriosis."
R. F. MEARS, M.D., Northfield
Case Report: "Gun Shot Wound of Kidney."
E. J. RICHARDSON, M.D., Saint Paul
"Present Status of Surgery in the Treatment of Heart Disease."
IVAN D. BARONOFSKY, M.D., Minneapolis

Intermission

"Epidemiological Situation in Southern Minnesota 1953."
State Board of Health

"Conditions Confused with Leukemia in Children."
S. D. MILLS, M.D., Rochester

"The Mankato Rehabilitation Center."
WM. S. CHALGREN, M.D., Mankato

"Current Trends in the Management of Infantile Hydrocephalus."
HENRY S. DODGE, M.D., Rochester

Cocktail Hour—5:30 p.m.

Mankato Country Club
Courtesy of Mankato Pharmacists

Banquet—6:30 p.m.

Mankato Country Club

Remarks: O. J. CAMPBELL, M.D., Minneapolis, President of the State Medical Association

Presidential Address: H. J. NILSON, M.D., Mankato

"Medical Tour of India."
LEO G. RIGLER, M.D., Minneapolis

The Women's Auxiliary of the Blue Earth County Medical Society will entertain the visiting ladies.

Authors are requested to leave typewritten copies of their papers with the Secretary in order that they may be submitted to MINNESOTA MEDICINE for publication.

Application for membership may be made at the registration desk.

AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION

The thirty-first annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held on August 31, September 1, 2, 3 and 4, 1953, at the Palmer House, Chicago.

Scientific and clinical sessions will be given on the first four days of the session. All are open to members of the medical profession in good standing with the American Medical Association.

Full information may be obtained by writing to the executive offices, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

AMERICAN MEDICAL WRITERS' MEETING

The tenth annual meeting of the American Medical Writers' Association will be held at the Elk's Club, Springfield, Illinois, September 23, President Lewis J. Moorman, M.D., editor of the *Journal of the Oklahoma State Medical Association*, presiding. (The meeting will be held during the eighteenth annual meeting, Mississippi Valley Medical Society—September 23, 24, 25—at the same club.)

The morning session will feature a Symposium on Medical Writing by Julius Jensen, M.D., St. Louis, Steward G. Wolfe, Jr., M.D., Oklahoma City, Theodore R. Van Dellen, M.D., Chicago, Richard M. Hewitt, M.D., Rochester, Minnesota, and Lee D. von Antwerp, Chicago. Also papers on Medical Writing for Medical Students by Walter R. Bett, M.D., London, England, and Dean F. Smiley, M.D., Chicago. The afternoon session will feature a symposium on Medical Writing by a non-medical group of six from the *Southern Medical Journal*, Mayo Clinic, Illinois State Medical Society and the Universities of Oklahoma and Michigan. The evening session will feature a fellowship hour, dinner, presentation of awards and fellowships and an address by Walter R. Bett, M.D., of London, the distinguished British writer and libarian. With thirteen speakers on the program this is the most ambitious program the association has ever had. A detailed program may be secured from Harold Swanberg, M.D., Secretary, W.C.U. Building, Quincy, Illinois. All concerned with any phase of medical writing are cordially invited. There are NO registration fees.

AMERICAN UROLOGICAL ASSOCIATION AWARD

The American Urological Association offers an annual award of $1,000 (first prize, $500; second prize, $300, and third prize, $200), for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been in such specific practice for not more than ten years, and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Waldorf-Astoria, New York, New York, May 31 to June 3, 1954.

For full particulars, write to the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his office before February 1, 1954.

EIGHTEENTH ANNUAL CONVENTION OF THE NATIONAL GASTROENTEROLOGICAL ASSOCIATION

The National Gastroenterological Association will hold its Eighteenth Annual Convention and Scientific Sessions at The Biltmore Hotel, Los Angeles, October 12, 13, 14, 1953.

The program will include a Symposium on Cirrhosis of the Liver; Panel Discussions on "Peptic Ulcer;" "Diseases of the Large Bowel" and "Latest Developments in Cancer Research," and additional papers on interesting subjects in gastroenterology and related fields.

Following the Convention, on October 15, 16, 17, 1953, the Association's Fifth Annual Course in Postgraduate Gastroenterology will be given at The Biltmore Hotel and the College of Medical Evangelists in Los Angeles. The Course will be under the personal direction of Drs. Owen H. Wangensteen of Minneapolis, Minnesota, and I. Snapper of Chicago, Illinois, who will be assisted by a faculty from the medical schools in and around Los Angeles.

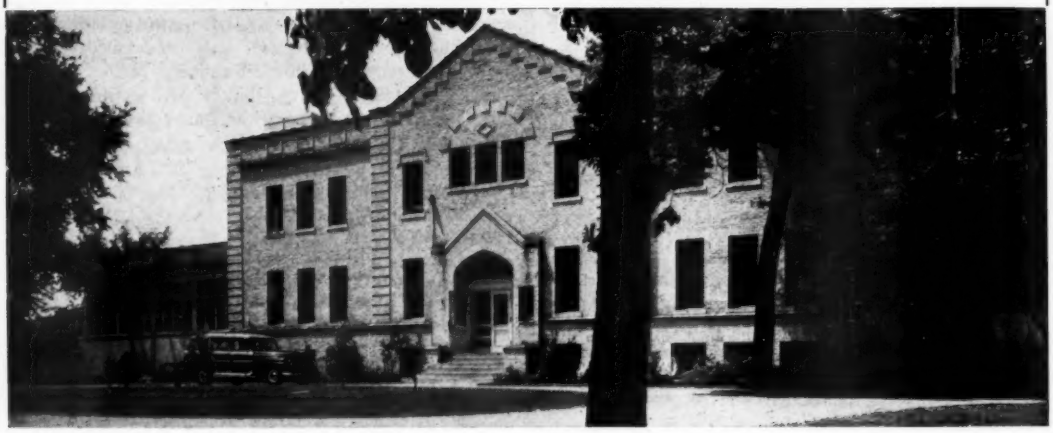
THE SHELTERING ARMS

4330 River Road, Minneapolis 6, Minnesota

A HOSPITAL FOR TREATMENT OF POLIOMYELITIS

Acute and Convalescent

Fully Approved by American College of Surgeons
Modern treatment—Staff includes Kenny trained technicians



The Scientific Sessions on October 12, 13 and 14 are open to all physicians without charge. The Postgraduate Course will be open to only those who have matriculated in advance.

Further information concerning the program and details of the Postgraduate Course may be obtained by writing to the Executive Officer, National Gastroenterological Association, 1819 Broadway, New York 23, New York.

COURSE IN OCCUPATIONAL SKIN PROBLEMS

The Institute of Industrial Health, University of Cincinnati, will hold a course in Occupational Skin Problems, October 12-16, 1953. The general objective of the program is to fulfill the professional needs of the industrial physician. The program will be divided into three daily sessions, consisting of morning didactic lectures and clinical demonstration, afternoon field instruction in industrial plants, and evening panel discussions. The didactic presentations will include orientation in the anatomy, physiology and chemistry of the skin, consideration of the etiologic aspects, clinical types, diagnosis and treatment of occupational dermatoses, and discussion of specific measures of prevention and control. The evening sessions, in panel form, have been designed to present pertinent material on the subjects of cutaneous cancer, cutaneous allergy, and medico-legal problems. A clinic on industrial skin problems will be held.

There will be a registration fee of $50.00. Registration will be limited to fifty persons and application must be made before September 15, 1953.

For further information, write to the Secretary, Institute of Industrial Health, Kettering Laboratory, Eden and Bethesda Avenues, Cincinnati 19, Ohio.

1954 COLLEGE ESSAY AWARD

The Board of Regents of the American College of Chest Physicians offers three awards to be given annually for the best original contribution, prepared by any medical student studying for the degree of Doctor of Medicine, on any phase relating to the diagnosis and treatment of chest disease.

The first prize will consist of a cash award of $250 and a certificate. The second and third prizes will be certificates of merit. The Essay award is open to all medical students in accredited medical schools throughout the world.

The winning contributions will be selected by a board of impartial judges and will be announced at the Twentieth Annual Meeting of the American College of Chest Physicians to be held in San Francisco, California, June 17-20, 1954. All manuscripts become the property of the American College of Chest Physicians and will be referred to the Editorial Board of the College jour-

1 *to escape pollens*

2 alternatives for the hay fever patient

2 *to relieve symptoms*

Pyribenzamine®

hydrochloride
(tripelennamine hydrochloride Ciba)

Once atop Pike's Peak, your hay fever patient can enjoy freedom from pollens. But for patients who must remain in a high-pollen environment, you can institute this effective therapy: one or two Pyribenzamine tablets, 3 or 4 times daily.

Alone and as an adjunct to desensitization, Pyribenzamine has proved effective in relieving hay fever symptoms, as evidenced by thousands of published case reports. On the basis of this evidence, no other antihistamine combines greater clinical benefit with greater freedom from side effects.

For your prescription needs, Pyribenzamine 50 mg. tablets are available in bottles of 100 and 1000 at all pharmacies.

Ciba

Ciba Pharmaceutical Products, Inc., Summit, N. J.

2/1920H

nal *Diseases of the Chest* for consideration. The College reserves the right to invite the winner of the first prize to present his contribution at the Annual Meeting.

Applicants are advised to study the format of *Diseases of the Chest* as to length, form, and arrangement of illustrations to guide them in the preparation of the manuscript. The following conditions must be observed:

1. Five copies of the manuscript typewritten in English (double spaced) should be submitted to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois, not later than March 15, 1954.

2. The only means of identification of the author shall be a motto or other device on the title page and a sealed envelope bearing the same motto on the outside enclosing the name and address of the author.

3. A letter from the Dean or Chairman of the Department of Medicine of the medical school certifying that the author is a medical student studying for the degree of Doctor of Medicine and that the contents represent original work.

EIGHTH ANNUAL POSTGRADUATE COURSE ON DISEASES OF THE CHEST

The Council on Postgraduate Medical Education of the American College of Chest Physicians, in co-operation with the respective state chapters of the College as well as the staffs and faculties of the local hospitals and medical schools, will sponsor the Eighth Annual Postgraduate Course on Diseases of the Chest at the Hotel Knickerbocker, Chicago, Illinois, September 28-October 2, 1953, and the Sixth Annual Postgraduate Course on Diseases of the Chest to be held at the Hotel New Yorker, New York City, November 2-6, 1953.

These annual postgraduate courses endeavor to bring physicians up to date on recent advancements in the management and treatment of heart and lung disease. Tuition for each course is $75.

Further information may be secured by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

PAN AMERICAN MEDICAL WOMEN'S ALLIANCE, INC.

The Fourth Congress of the Pan American Medical Women's Alliance will be held at the Beekman Towers Hotel, First Avenue and 49th Street, New York, from September 24 through October 1, 1953. The morning hours will be given over to a scientific program of general interest. There will be round-table luncheon discussions with leaders speaking Spanish and English. Through the sponsorship of leading New York medical women those interested in a special field will have opportunities to attend clinics of their choice. The Medical Women's Association of New York is serving as hostess and planning a most delightful program, including tours of the New York Hospital-Cornell Medical Center and Columbia-Presbyterian Medical Center, a boat trip around Manhattan Island, tour and luncheon at the United Nations, visits to Radio City and the Empire State Building, and a drive to Hyde Park.

Dilaudid hydrochloride

(dihydromorphinone hydrochloride)

COUNCIL ACCEPTED

Powerful opiate analgesic - dose, 1/32 grain to 1/20 grain.

Potent cough sedative - dose, 1/128 grain to 1/64 grain.

Readily soluble, quick acting.

Side effects, such as nausea and constipation, seem less likely to occur.

An opiate, has addictive properties.

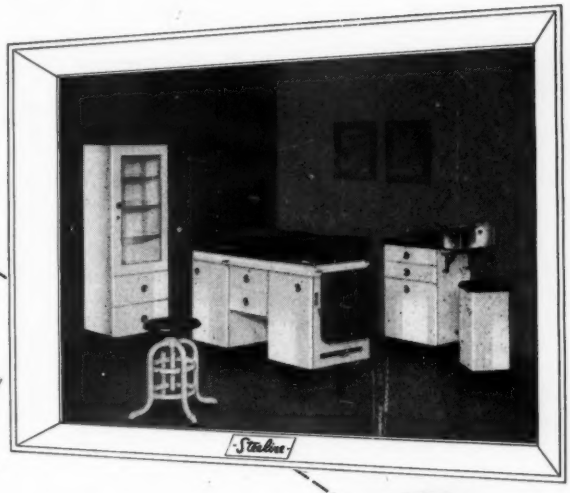
Dependable for relief of pain and cough, not administered for hypnosis.

● Dilaudid is subject to Federal narcotic regulations. Dilaudid, Trade Mark Bilhuber.

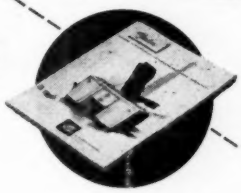
Bilhuber-Knoll Corp. Orange, N. J.

design achievement in treatment room furniture

New Steeline has gone through fifteen years of gradual development to reach the fine degree of design perfection it now has. The suggestions of scores of physicians and the engineering skill of our own production plant have been combined to produce this outstanding treatment room equipment. New features such as foam rubber cushioned contour top, magnetic door latches, concealed paper sheeting holder, superb color finishes, etc., are all fully described and illustrated in our new full-color brochure—send for yours today.



FREE . . . 16-page full-color brochure complete with specifications — send for your copy today.



A. S. ALOE COMPANY OF MINNESOTA • 927 Portland Avenue • Minneapolis 4, Minnesota

Hotel reservations should be made direct to the hotel. For further information write: Registration Chairman, Ina A. Marsh, M.D., 140 Linwood Avenue, Buffalo 9, New York.

MINNESOTA PUBLIC HEALTH CONFERENCE

The Minnesota Public Health Conference will hold its seventh annual meeting Thursday and Friday, September 24 and 25, at the Nicollet Hotel in Minneapolis.

Dr. Lee Burney, Indiana State Health Officer, will be the principal speaker at a banquet meeting Thursday evening. Thursday afternoon session will be devoted to a discussion of local health services in Minnesota.

Group meetings of special interest to physicians will be held all day Friday.

Last year more than 600 public health workers from all parts of the state attended the Conference.

MISSISSIPPI VALLEY MEDICAL SOCIETY MEETING

The eighteenth Annual Meeting, Mississippi Valley Medical Society will be held at the Elk's Club, Springfield, Illinois, Sept. 23-25. (The tenth Annual Meeting, American Medical Writers Association will also be held at the Elk's Club on Sept. 23.)

The meeting will feature forty-one speakers and over forty scientific and technical exhibits in an intensive three-day session with the entire program geared to especially appeal to men in general practice. The program will include a Symposium on Diabetes, a Clinico-Pathologic Conference and a Panel on "What Is New in Medicine and Surgery." There will be clinical teachers from the Universities of Illinois, Iowa, Louisville, Oklahoma, Tennessee, and from Northwestern, St. Louis and Washington Universities. The September 24 evening program will feature a presentation of awards and fellowships with the principal address by Assistant Secretary of Defense (Health and Medical) Melvin A. Casberg, M.D., Washington, D. C., formerly Dean of St. Louis University. A detailed program may be secured from Harold Swanberg, M.D., Secretary, W.C.U. Building, Quincy, Illinois. All ethical physicians are cordially invited and urged to attend. There are NO registration fees.

SYMPOSIUM ON CARDIOVASCULAR PHYSIOLOGY AND SURGERY

Under the auspices of the Minnesota Heart Association, the University of Minnesota will present a Symposium on Cardiovascular Physiology and Surgery on September 14 to 16 in the Museum of Natural History Auditorium on the University campus.

Participants will include such internationally known experts as Drs. W. G. Bigelow, Toronto; Clarence Crafoord, Stockholm, Sweden; Lewis Dexter, Boston; Charles T. Dotter, Portland, Oregon; John H. Gibbon, Philadelphia; Robert P. Glover, Philadelphia; William F. Hamilton, Augusta, Georgia; Dwight E. Harken, Boston; W. F. H. M. Mommaerts, Durham, North

Carolina; Willis J. Potts, Chicago; John W. Remington, Augusta, Georgia; Robert Rushmer, Seattle; C. W. Sheppard, Oak Ridge, Tennessee; Torgny Sjostrand, Stockholm, Sweden; Olle Snellman, Stockholm, Sweden; H. J. C. Swan, Rochester, Minnesota; Henry Swan, Denver; Richard W. Stow, Rochester, Minnesota; and E. Wetterer, Munich, Germany.

The symposium will be open, without tuition fee, to all physicians and to qualified investigators in the field of cardiac physiology. Housing accommodations will be available on the campus for out-of-town registrants who wish them. Further information may be obtained from the Director, Department of Continuation Medical Education, University of Minnesota Hospitals, Minneapolis 14, Minnesota.

CONTINUATION COURSES

Dental Problems in Medicine for Physicians will be presented by the University of Minnesota on October 21, 1953, at the Center for Continuation Study. The physician is from time to time confronted with a problem which is principally a dental one but for which he is called upon to render emergency treatment. In other instances the patient may seek his physician's advice as to whether a given dental procedure should be carried out. This course will attempt to provide useful information which will help the physician meet such problems. Subject matter will include examination of the teeth, gums, and mouth; oral manifestations of systemic disease; management of injuries involving the mouth and jaws; afflictions of the tempero-mandibular joint; and the fluoride problem. Faculty for the course will be made up of members of the faculties of the University of Minnesota Dental and Medical Schools.

* * *

Radiation Therapy for Specialists will be held at the Center for Continuation Study on the University of Minnesota campus from October 26 to 31, 1953. Principles and clinical applications of all forms of irradiation therapy will be discussed. The guest faculty will include Dr. Robert McWhirter, Professor, Department of Radiotherapy, Royal Infirmary, Edinburgh; Dr. Raymond Zirkle, Institute of Radiobiology and Biophysics, University of Chicago; Dr. Edith Quimby, Department of Radiology, Columbia University, New York; and Dr. Lauren V. Ackerman, Professor of Surgical Pathology and Pathology, Washington University School of Medicine, St. Louis, Missouri. The course will be presented under the direction of Doctors Leo G. Rigler, Professor and Head, Department of Radiology, and K. W. Stenstrom, Director of Radiation Therapy. Members of the faculty of the University of Minnesota Medical School and the Mayo Foundation will complete the faculty for the course.

* * *

The University of Minnesota, in conjunction with the American College of Chest Physicians and the Minnesota Chapter of the American Trudeau Society, will present a continuation course on *Diseases of the Chest* October 15 to 17, 1953. Intended primarily for physicians engaged in general practice, the course will emphasize management of frequently-met chest problems. Three outstanding visiting speakers will participate in the program: Dr. Andrew Banyai, Associate Clinical Professor of Medicine, Marquette University Medical School, Milwaukee, Wisconsin; Dr. Donald S. King, Consultant, Tuberculosis Service Veterans Administration Area No. 1, Boston, Massachusetts; and Dr. Dan Morse, Medical Director and Superintendent, Peoria Municipal Tuberculosis Sanitarium, Peoria, Illinois. The remainder of the faculty will include members of the clinical and full-time faculty of the University of Minnesota Medical School and the Mayo Foundation.

* * *

The University of Minnesota will present a course in *Hematology for Medical Technologists* at the Center for Continuation Study on October 6 to 7, 1953. This year's course is designed to emphasize technical aspects of hematology of use to the medical technologists. The program will be presented under the direction of Dr. Gerald T. Evans, Director of Hospital Laboratories, and the faculty will include members of the staff of the University of Minnesota Medical School.

NEW COURSE FOR LABORATORY AIDS

A twelve-month course for laboratory aides—a pioneer venture by the general extension division and the college of medical sciences—will begin September 28 at the University of Minnesota.

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with Glenwood Hills Hospitals

HOMEWOOD HOSPITAL

Corner Penn and Plymouth Avenues North

Minneapolis Minnesota

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 **$25 weekly indemnity, accident and sickness**	**$15,000 accidental death Quarterly $24.00** **$75 weekly indemnity, accident and sickness**
$10,000 accidental death Quarterly $16.00 **$50 weekly indemnity, accident and sickness**	**$20,000 accidental death Quarterly $32.00** **$100 weekly indemnity, accident and sickness**

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00 INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION

51 years under the same management

400 First National Bank Building
Omaha 2, Nebraska

$19,500,000.00 PAID FOR CLAIMS

$200,000.00 deposited with State of Nebraska for protection of our members

Geared to prepare young men and women for work as laboratory assistants to medical technologists and physicians, the course will include six months of classes on the University campus and six months of practical training in Twin City hospital laboratories.

The course will be run in conformity with the requirements for certification of laboratory aide under the Registry of Medical Technologists of the American Society of Clinical Pathologists. After successfully completing this course and after a year's work under a qualified physician, students will be eligible to take the certification examination.

Those enrolled in the program will attend classes during the University's regular fall and winter quarters. Starting March 29, 1954, they will begin their clinical training. Comprehensive examinations, scheduled September 13-27, 1954, will round-out the course.

Students will take a curriculum consisting of courses in physiological chemistry, human anatomy, basic laboratory techniques, electrocardiography and basal metabolism, blood bank techniques, urinalysis and elementary hematology, bacteriology, and physiology.

The course is open to high school graduates with college aptitude ratings of 40 percentile or higher, who are in the top half of their high school class and who fulfill the necessary personal qualifications such as an ability to work with people, a liking for science, and integrity. Since enrollment will be limited, students will be selected on a basis of scholastic aptitude and vocational promise.

Applications for the course can be obtained from the Medical Technology Office, W225, University Hospitals, University of Minnesota, Minneapolis 14. The forms must be returned by August 21.

AMERICAN COLLEGE OF CHEST PHYSICIANS

The twentieth annual meeting of the American College of Chest Physicians will be held in San Francisco, California, June 17-20, 1954. Physicians interested in presenting scientific papers on any phase in the diagnosis and treatment of heart and lung disease should send a 100-word abstract, not later than January 1, 1954, to Dr. Edgar Mayer, Chairman of the Committee on Scientific Program, 850 Fifth Avenue, New York 21, New York.

Woman's Auxiliary

NORTHERN MINNESOTA AUXILIARY PLANS ANNUAL MEETING

MRS. ROBERT D. ESTREM

Doctors and their wives from the northern part of Minnesota will be attending the annual meeting of the Northern Minnesota Medical Association in Fergus Falls on August 28 and 29, 1953.

Auxiliary members will be entertained at a luncheon on Friday, August 28, and will meet for breakfast on Saturday, August 29. They are also invited to attend the Friday night banquet with their husbands.

In Memoriam

ALEXANDER AUBIN

Dr. Alexander Aubin, a physician of Minneapolis for thirty-six years, died June 26, 1953, at St. Cloud, Minnesota.

Dr. Aubin was born in Canada, September 10, 1872. He graduated magna cum laude from Laval University, Quebec, Canada, in 1902. He practiced medicine in Minneapolis from 1912 until his retirement in 1948.

Dr. Aubin is survived by his daughter, Mrs. Joseph B. Gaida of St. Cloud; a sister, Mrs. Z. Bonneville of Cornwall, Canada, and two brothers, Alfred of Saint Paul and Albert of Edmonton, Canada.

WALTER MEREDITH BOOTHBY

Dr. Walter M. Boothby, well known for his work in metabolism and aviation medicine, died of a heart condition in Albuquerque, New Mexico, July 3, 1953. Dr. Boothby had retired from the Mayo Clinic and Foundation in 1948 and, on invitation from the King of Sweden, spent two years at the University of Lund continuing his work in aviation medicine. Following his return to the United States, he was awarded the order of Commander of the North Star, one of the top Swedish honors. In 1950 Dr. Boothby joined the professional staff of the School of Aviation Medicine at Randolph Field, San Antonio, Texas, and later became associated with the Lovelace Clinic in Albuquerque. Dr. Boothby was one of the world's foremost scientists in aviation medicine and during World War II, with Dr. William Randolph Lovelace and Dr. A. H. Bulbulian, developed in Rochester the BLB oxygen mask for aviators.

Dr. Boothby was born July 28, 1880, in Boston. He received the degree of B.A. in 1902, of M.D. in 1906, and of M.A. in 1907 from Harvard University. He interned at the Boston City Hospital for eighteen months; practiced surgery in Boston for seven years; was in charge of the metabolism laboratory at the Peter Bent Brigham Hospital, Boston, from 1913 to 1916; was instructor in anatomy from 1910 to 1916, and lecturer on anesthesia in the Harvard Medical School from 1914 to 1916. He entered the Mayo Clinic as head of the Section on Metabolism in November, 1916, and also was associate professor of medicine, the Mayo Foundation. During World War I he was with the A.E.F. in France for twenty-two months as captain and major in the Medical Corps; he was assigned for the greater part of the time to the Gas Defense Service. He was also at the front as chief of the surgical team for the St. Mihiel and Argonne battles. He became head of the Section on Aviation Medicine and Research, Mayo Foundation, in January, 1942.

Dr. Boothby was certified by the American Board of Internal Medicine as a specialist in internal medicine. He was a fellow of the American College of Surgeons, of the American College of Physicians and of the Aero Medical Association of the United States, and associate fellow of the Institute of Aeronautical Sciences. He was a member of the Massachusetts Medical Society, the American Physiological Society, the American Society of Biological Chemists, the American Society for Clinical Investigations, the Society for Experimental Biology and Medicine, the American Medical Association, the American Institute of Nutrition, and American Society for Experimental Pathology, the American Society for Pharmacology and Experimental Therapeutics, the Association of American Physicians, the Alumni Association of the Mayo Foundation, and Sigma Xi.

On November 15, 1930, Dr. Boothby married Catherine Burns who with two daughters, Mrs. Louis A. Schulze of Rochester and Mrs. Robert Reinhardt of Detroit, survive him.

GERHART A. DAHL

Dr. Gerhart A. Dahl, of Mankato, died July 15, 1953. He was born June 23, 1872, in Dell, Faribault County, Minnesota. After graduation from Luther College, Decorah, Iowa, he attended Hahnemann Medical College in Chicago, where he graduated in 1893.

Dr. Dahl came to Mankato in 1897 and began practice with the late Dr. W. A. Beach. He was one of the founders of the Mankato Clinic and continued his association with the clinic until his retirement in 1946.

For eighteen years, Dr. Dahl was a medical officer of the Minnesota 205th Infantry regiment of the Minnesota National Guard and served as a major in the organization from June 22, 1918, until his sixty-fourth birthday, on June 23, 1936. He was one of the few guardsmen in the state to be decorated by the state government for meritorius service. For almost thirty years, Dr. Dahl was coroner for Blue Earth County.

On August 29, 1903, Dr. Dahl married Alma Hanson in Mankato. He is survived by his wife, a sister and two nieces.

EDWIN G. EKLUND, JR.

Word has been received of the death of Dr. Edwin G. Eklund, Jr., in North Korea on February 28, 1951.

Dr. Eklund is a graduate of the University of Minnesota and went to Korea as a battalion aid surgeon in August, 1950. He was captured at Kunu-ri, North Korea, on December 1, 1950. He died of pneumonia and malnutrition.

Dr. Eklund is survived by his wife who lives at 1727 LaSalle Avenue, Minneapolis, and his mother, Mrs. Edwin G. Eklund, of Spring Lake Park.

AUGUST F. HUNTE

Dr. August F. Hunte, formerly of Truman, Minnesota, died at Alhambra, California, July 5, 1953, at the age of eighty-two.

Dr. Hunte was born at Beecher, Illinois, August 5, 1870. He obtained his M.D. degree from Rush Medical College in 1899 and practiced at Truman from 1899 to

Popular Type SACRO-ILIAC BELT

This high-grade sacro-iliac support is made of orthopedic webbing, 6 inches wide, well reinforced and supplied with perineal straps.

To determine size needed, take measurements around hip, 3 inches below the iliac crest. Stock sizes 30 to 44. Extra sizes available on special order.

Professional Price $5.95

Abdominal Supporters *Elastic Stockings* *Trusses*

C. F. ANDERSON CO., INC.

Surgical and Hospital Equipment

ATlantic 6508, ZEnith 2055 **901 Marquette Ave.**

MINNEAPOLIS 2, MINNESOTA

1930, when he moved to Bylas, Arizona. There he became a physician in the United States Indian Service at the San Carlos Indian Reservation. Following his wife's death, he and his daughter, Frances, moved to Alhambra, California. He is survived by his daughter.

During World War I Dr. Hunte served as an officer in the Medical Corps of the Army, being assigned to Base Hospital 114 of the A.E.F.

F. PAUL KORTSCH

Dr. F. Paul Kortsch, a physician of Prior Lake, Minnesota, since 1936, died July 15, 1953, aged forty-nine.

Dr. Kortsch was born in Saint Paul, Minnesota, July 2, 1904. He obtained his medical degree from the University of Colorado in 1935 and interned at St. Barnabas Hospital in Minneapolis and at St. Mary's Group of Hospitals at St. Louis, Missouri. He had done graduate work at Cook County Hospital, Chicago.

On June 15, 1929, he married Kathryn Niebergall, who with one daughter, Kathy, and two sons, Tommy and Jay, survive him.

Dr. Kortsch was a member of the Scott-Carver County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

LINUS F. LEITSCHUH

Dr. Linus F. Leitschuh of Winsted, Minnesota, died on June 28, 1953, at the age of forty-one. He obtained his medical degree from the University of Minnesota in 1938 and interned at Minneapolis General Hospital from 1937-39. He practiced at Red Lake Falls and Foley before moving to Winsted. During World War

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.

(Two Locations)

100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 **Minneapolis**

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting September 14, September 28, October 12
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting October 26
Surgical Anatomy and Clinical Surgery, two weeks, starting August 17, November 9
Gallbladder Surgery, ten hours, starting October 26
General Surgery, one week, starting October 5
Surgery of Colon and Rectum, one week, starting September 21
Basic Principles in General Surgery, two weeks, starting September 21
Thoracic Surgery, one week, starting October 12
Esophageal Surgery, one week, starting October 19
Breast and Thyroid Surgery, one week, starting October 26
Fractures and Traumatic Surgery, two weeks, starting October 26
GYNECOLOGY—Intensive Course, two weeks, starting September 21
Vaginal Approach to Pelvic Surgery, one week, starting August 31
OBSTETRICS—Intensive Course, two weeks, starting October 5
DERMATOLOGY—Intensive Course, two weeks, starting October 19
MEDICINE—Electrocardiography and Heart Disease, two weeks, starting October 12
Intensive General Course, two weeks, starting September 28
Gastroenterology, two weeks, starting October 26
Allergy, one month and six months, by appointment
CYSTOSCOPY—Ten-Day Practical Course starting every two weeks
UROLOGY—Intensive Course, two weeks, starting September 28

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

STOP . . .

BEFORE YOU BUY YOUR NEW CAR— SEE US . . .

we can save you money on the finance charge.

AMERICAN NATIONAL BANK
OF SAINT PAUL

Bremer Arcade **Robert at 7th** **CE 6666**

Member Federal Deposit Insurance Corporation

II, Dr. Leitschuh served as captain in the Army Medical Corps for five years.

He was a member of the McLeod County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Leitschuh is survived by his wife, two daughters, Carol and Jean, and two sons, Paul and Nicolas. His parents, Mr. and Mrs. Henry Leitschuh, reside in Sleepy Eye.

A. MASON RANDALL

Dr. A. Mason Randall of Ashby, Minnesota, died suddenly on June 20, 1953.

Dr. Randall was born at Sechlerville, Wisconsin, December 2, 1880. He graduated from the College of Medicine, Hamline University, in 1903 and opened an office at Underwood, Minnesota, the same year. In 1909, he moved to Ashby, where he practiced until his death.

On July 22, 1905, Dr. Randall was united in marriage to Anna Mortenson. His wife and one son, Carter, of Ashby, survive him.

Dr. Randall was a member of the Park Region District and County Medical Society, Minnesota State Medical Association and American Medical Association.

Between November, 1917, and June, 1919, Dr. Randall served as captain in the Medical Corps of the Army. He was interested in civic affairs and served thirty-one years on the school board. He was a member of the American Association of Railway Surgeons, Minnesota Association of Railway Surgeons, Ashby Community Club and staff of St. Luke's Hospital in Fergus Falls.

PATRICK J. GALLAGHER

Dr. Patrick J. Gallagher, formerly a resident of Graceville, Minnesota, died on July 12, 1953, in Seattle, Washington, at the age of seventy-four.

Dr. Gallagher was born in Westport, Ireland, and came with his parents to Graceville in early childhood. He was graduated from the University of Minnesota Medical School in 1904 and practiced medicine at Connel, Washington, for many years.

In 1918, Dr. Gallagher became medical director of the New World Life Insurance Company in Seattle, a post he held until his final illness forced him to resign.

He was a member of the King County Medical Society and the Washington State and American Medical Associations. A sister and brother, Mrs. P. H. Costello and A. E. Gallagher, both of Graceville, survive him.

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

North Shore Health Resort

Winnetka, Illinois

on the Shores of Lake Michigan

A completely equipped sanitarium for the care of nervous and mental disorders, alcoholism and drug addiction offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.
Medical Director

225 Sheridan Road — Phone Winnetka 6-0211

It had to be good to get where it is

THE COCA-COLA COMPANY

Of General Interest

Dr. A. D. Fetzek, recently graduated from the University of Minnesota Medical School, who interned at Minneapolis General Hospital, joined the St. Michael clinic staff early in July. Dr. Fetzek will practice with **Dr. R. D. Thielen.**

* * *

Dr. S. W. Giere, of Benson, chairman of the Swift County Heart Fund Campaign, was the recipient of a merit award from the Minnesota Heart Association, in June. The citation referred to Dr. Giere as a "public-spirited Minnesotan who places humanitarian ideals above self-interest" and as one "who has earned mankind's gratitude for the future reduction of the ravages of heart disease."

* * *

Dr. Frank Hammond Krusen, of Rochester, specialist in physical medicine for twenty-three years, was named Minnesota's nominee, June 26, for the President's award in 1953. The award is given annually to a physician who has made a significant contribution to the rehabilitation and employment of persons with physical impairments.

Dr. Krusen has been head of the Mayo Clinic's physical medicine section for eighteen years. He was chairman, in 1944, of Bernard Baruch's committee on war and postwar physical rehabilitation, is past president of the American Congress of Physical Medicine, has been councillor of the National Association for Crippled Children since 1947, serves on the board of the Minnesota Rehabilitation Association, and is the author of many widely circulated books and articles in the physical medicine field.

* * *

Dr. H. O. Hagen, of New Richland, was unable to attend a dinner at Chicago University given by the Alumni of the Rush Medical College honoring the graduates of 1903, held in June. Dr. Hagen has been ill for the past year.

* * *

Dr. Lyle A. Weed, of Rochester, received an honorary degree of Doctor of Science from his alma mater, Simpson College, of Indianola, Iowa, May 31.

* * *

Dr. and Mrs. Joseph Flynn, of Richfield, celebrated their fiftieth wedding anniversary in June. Dr. Flynn, now retired, was graduated from Rush Medical College in 1900 and practiced for many years in Minneapolis.

* * *

Dr. W. L. Patterson, of the Fergus Falls State Hospital, gave the address of welcome to the farmers attending the Grassland Field Day held at the State Hospital grounds, June 9. The field day program consisted of tours of farm tracts and various demonstrations of farm implements and equipment. There are 600 acres in cropland at the state hospital.

Dr. Jack Delmore, of Roseau, president of the Red River Valley Medical Society, welcomed the guest legislators and newspapermen of Northwestern Minnesota who attended the Red River Valley Medical Society's dinner reception, held at East Grand Forks, June 8. **Dr. L. E. Dale,** Red Lake Falls, presided as toastmaster, and local arrangements were made by **Dr. O. K. Behr,** of Crookston.

* * *

Dr. S. J. Raetz, of Maple Lake, attended the fifth annual convention of the International Academy of Proctology which was held in New York, New York, May 28 to 31, 1953. Dr. Raetz was recently elected to a Fellowship in the International Academy.

* * *

Dr. James K. Heid, of Browerville, who recently was graduated from the University of Minnesota Medical School, was married June 20, to Barbara Anne Hadley, also of Browerville. Classmates of the groom, **Drs. Lyle Haberland** and **Maland Hurr,** were ushers.

* * *

Roseau County physicians, meeting in Roseau, June 22, formed "The Roseau County Medical Society," with **Dr. D. O. Berge,** president, and **Dr. Robert J. Delmore,** secretary. Other doctors of the county are **J. L. Delmore, Jack Delmore,** and **Gilbert S. Wheeler,** all of Roseau; **Kenneth Nelson,** of Warroad, and **L. H. Klefstad,** of Greenbush.

* * *

Dr. Erick Cukors, who has been a member of the Fergus Falls State Hospital staff, left July 1 to accept a position at the Jamestown, North Dakota, State Hospital.

* * *

Dr. Robert Bormes, recently on the staff of the Veterans Hospital at Milwaukee, Wisconsin, joined the Olive Clinic at Graceville, in June.

* * *

Dr. Bela Gallo, of Czechoslovakia, began the practice of medicine in Lake Bronson in June. Dr. Gallo received his medical degree from the University of Prague in Czechoslovakia, but did some of his study at the University of Budapest, Hungary. The citizens of Lake Bronson sponsored Dr. Gallo's coming to the United States. Recently Dr. Gallo completed the two years of medical education in the United States necessary for becoming licensed in this country.

* * *

Mrs. J. A. Poirier, seventy-three, wife of **Dr. J. A. Poirer,** veteran physician of Forest Lake, died June 13. Mrs. Poirier had been ill for several months.

* * *

Dr. Jan Tillisch, of the Mayo Clinic, attended a

Why Should You Own Municipal Bonds?

BECAUSE—

Your money is invested in a class of security that has been proved to be second only to U. S. Government bonds in certainty of payment.

It has been authoritatively reported that less than 2% of all municipal issues defaulted during the depression and nearly all of these were cleared up without loss of principal.

BECAUSE—

Your money earns an income that is not subject to current federal income taxes —you are not adding to your tax burden from your investment income.

Income from state and municipal bonds has never been subject to the levy of federal income taxes.

BECAUSE—

Your money is securely invested and you need not be concerned with "Day-to-day market fluctuations."

Municipal bond investors buy bonds for interest income to maturity without market worries in the meantime.

BECAUSE—

Your money is invested at a known yield or rate of return.

The income from municipal bonds is not contingent upon the action of a board of directors—semi-annual interest coupons are attached to each bond to be deposited in your bank as they mature.

BECAUSE—

Your money would be invested in a class of security known to conservative investors for many years.

Municipal bonds have been issued in this country since prior to the Revolutionary War. They are actively traded in a market with a greater volume than all bonds traded on the stock exchange.

Write or call for descriptive circulars

JURAN & MOODY

MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9361
PRior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

meeting of the executive committee of the Aero Medical Association in Washington, D. C., June 20.

* * *

Dr. B. Melby, of Blooming Prairie, was honored June 17, by the community members paying tribute to his fifty years of medical practice. On "Dr. Melby night" everyone in the community was invited to join in the demonstration of civic appreciation of a good citizen.

Dr. Melby was presented with a gold clock-pen desk set and a framed, hand-lettered scroll commemorating his fiftieth anniversary of practicing medicine. He has been a member of the American Medical Association for over fifty years.

Practicing in Blooming Prairie since 1905, not only has Dr. Melby served the medical needs of the community but for thirty-nine years served as a member of the Board of Education. In February, 1951, he was honored in being awarded a scroll by the Minnesota Educational Association for his long and faithful interest and work in the public schools.

* * *

To assist work on three polio research projects at the University of Minnesota, the March of Dimes awarded grants aggregating $113,000, in June.

One grant of $83,646 was awarded to **Dr. Jerome T. Syverton,** professor of bacteriology and immu-

nology, toward developing a rapid laboratory test for polio diagnosis.

Dr. A. B. Baker, professor of neurology, was awarded supervision of a grant of $24,511, to expand studies of brains and spinal cords from fatal cases of bulbar poliomyelitis.

A grant of $5,671 went to **Dr. Gaylord W. Anderson,** Mayo professor of public health, who will continue a careful analysis of data collected on polio patients during the 1946 Minnesota epidemic.

* * *

Dr. A. A. Bailey, of the Mayo Clinic, attended the meeting of the Canadian Neurologic Society, held in Winnipeg. Canada, June 20. Dr. Bailey is a member of the Council of the Society, and recently became a member of the American Neurological Association.

* * *

Dr. R. C. Magnuson, of Cambridge, was recently drafted for military service. **Dr. K. A. March** was appointed village health officer, in June, to succeed Dr. Magnuson.

* * *

Dr. D. A. Boyd, Jr., of Rochester, attended a meeting of the Special Medical Advisory Group to the Veterans Administration in Washington, D. C., June 8.

* * *

Dr. A. C. Peterson, of Dassel, celebrated his fiftieth year in the practice of medicine in June. Forty-eight of the fifty years have been spent in Dassel. Several years ago Dr. Peterson was forced to curtail his practice because of ill health, but since he is the only doctor in the community he is again doing all his health will permit in caring for the sick of the community. Dr. Peterson is seventy-eight years old.

* * *

Dr. Robert Teif, a graduate of the University of Minnesota Medical School, joined **Dr. M. J. Bernier,** of North Saint Paul, in his practice, July 1.

* * *

Dr. B. P. Grimes, superintendent of the State Hospital at St. Peter, was guest speaker at the meeting of the Exchange Club of St. Peter, June 24.

* * *

Dr. Hobert J. Setzer, Jr., son of **Dr. and Mrs. Hobert J. Setzer,** Saint Paul, who recently graduated from the University of Minnesota Medical School, was married, June 20, to Margaret Jean Larson, of Minneapolis. Dr. Setzer is interning at Minneapolis General Hospital.

Dr. P. S. Hench, of the Mayo Clinic, who was recently elected to the Board of Regents of the American College of Physicians, attended a meeting of the committee on fellowships and awards of the College, held in Ann Arbor, Michigan, July 20.

* * *

The furnishing of narcotics pursuant to telephone advice of practitioners is prohibited, whether prescriptions covering such orders are subsequently received or not, except that in an emergency a druggist may deliver narcotics through his employe or responsible agent pursuant to a telephone order, provided the employe or agent is supplied with a properly prepared prescription before delivery is made, which prescription shall be turned over to the druggist and filed by him as required by law.

* * *

A television program **"News at Noon"** sponsored by the Blue Shield and Blue Cross is appearing on Channel 4, WCCO-TV each noon, 12:00 to 12:15, Monday through Friday. The program is said to be worth watching and calling to the attention of others.

* * *

Dr. Henry E. Michelson, of Minneapolis, has been chosen to give the William Allen Pusey oration before the Chicago Institute of Medicine on September 23, 1953. His subject will be "A Review and an Appraisal of the Present Knowledge of Lupus Erythematosus."

* * *

Dr. Howard J. Frykman, of Minneapolis, was a guest speaker at the combined meetings of the Wright County Medical Society and the Buffalo Hospital staff, which was held July 7, at Beecher's Resort on Clearwater Lake. Dr. Frykman spoke on "Common Office Proctological Problems."

* * *

The **South Dakota Board of Medical Examiners** has announced the passage of legislation creating an annual registration fee for licenses in that state in the amount of $2.00. The registration takes effect January 1, 1954. Those licensed in South Dakota who wish to maintain their license by payment of the registration fee, please contact the South Dakota Board of Medical Examiners. 300 First National Bank Building, Sioux Falls, South Dakota.

* * *

Dr. David T. Carr, Mayo Clinic, Rochester, was a guest speaker at a dinner meeting held during the forty-sixth annual meeting of the Nebraska Tuber-

P&H

A Complete Service

FOR THE MEDICAL AND HOSPITAL PROFESSION

Physicians & Hospitals Supply Company, Inc.

1400 Harmon Place • Minneapolis 15, Minnesota

Patients' Lounge

Saint Paul's Exclusive

CRESTVIEW

NEUROPSYCHIATRIC

HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- **Occupational therapy and recreational department.**
- **Complete X-ray and laboratory.**
- **Electrocardiography—basal metabolism.**
- **Electroencephalography available.**
- **All patients rooms air-conditioned.**
- **Background music and psychotherapy sound equipment.**
- **Medically staffed by every neurologist and psychiatrist in Saint Paul.**
- **Especially trained nursing staff.**

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association and the Ramsey County Medical Society.

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul

GArfield 5841

A non-profit organization

culosis Association, June 17-18, in Omaha, Nebraska. Dr. Carr cited some of the "miracles" in tuberculosis work in his talk, "Magic Bullets Against Tuberculosis."

* * *

Dr. Stewart T. Ginsberg, formerly of Saint Paul, was named manager of the new 956-bed neuropsychiatric hospital at Pittsburgh, Pennsylvania, June 25. Dr. Ginsberg received his medical degree from the University of Minnesota in 1932.

* * *

Dr. Walter P. Gardner, of Saint Paul, was appointed by Gov. C. Elmer Anderson, to represent the medical profession on the new state advisory commission on the problem of alcoholism. The board, as appointed by Governor Anderson, began functioning July 1, as provided by recent legislation.

* * *

Dr. H. O. Mortenson, of Pequot Lakes, recently separated from the Army Medical Corps, began practice in Menahga, July 1. Dr. Mortenson was graduated from the University of Minnesota Medical School in 1951. He was awarded the bronze star for meritorious service in Korea.

* * *

Dr. Russell M. Wilder, former member of the Mayo Clinic staff, retired as director of the National Institute of Arthritis and Metabolic Diseases at Bethesda, Maryland, July 1. Dr. Wilder, internationally known as an authority on diabetes and nutrition and the first director of the NIAMD, retired because of ill health.

* * *

Dr. Catherine B. Friedrich, of Red Wing, became the bride of **Dr. Harlan David Root,** of Brainard, New York, June 26, at a ceremony held in the Christ Episcopal Church at Red Wing. Dr. Friedrich and Dr. Root both received their medical degrees from Cornell University, Ithaca, New York.

* * *

Dr. Bryson Roy McHardy, of Minneapolis, became a member of the permanent staff of the Karlstad Hospital, Karlstad, Minnesota, in July. Dr. McHardy was graduated from the University of Minnesota Medical School and served in the Air Force in World War II.

* * *

Dr. James W. Halvorson, who has been recalled to the Navy, was honored at a testimonial dinner given June 30 by the Goodhue community members. Dr. Halvorson has practiced in the Goodhue community for three years and will report to the Navy in August.

* * *

Dr. Owen C. Bolstad, formerly of the Duluth Clinic, began practice in Little Falls in July, in association with **Drs. D. L. Johnson, A. H. Benson,** and **W. F. Skaife.** Dr. Bolstad, a graduate of the

University of Minnesota Medical School, completed his internship at St Luke's Hospital at Duluth.

* * *

Dr. Robert D. Koenig, Ancker Hospital, Saint Paul, began practice in Paynesville in July. Dr. Koenig is replacing **Dr. Ray Lindeman,** who was recalled to service with the U. S. Air Force.

* * *

Dr. W. W. Rieke, of Wayzata, joined **Dr. Richard F. Kline** in his practice at Grand Rapids in July. Dr. Rieke is replacing **Dr. David Feigal,** who is serving with the Army Medical Corps.

* * *

Dr. and Mrs. J. S. Blumenthal, of Columbia Heights, Minneapolis, celebrated their twenty-fifth wedding anniversary, June 27. Dr. Blumenthal has practiced in Columbia Heights for thirty years.

* * *

Dr. James H. Reinhardt (Lt. MC), formerly in practice in Alexandria, was named chief of the department of obstetrics and gynecology at the James Connally Air Force Base Hospital at Waco, Texas.

* * *

Dr. Owen H. Wangensteen, chief of surgery at the University of Minnesota Medical School, was the recipient of a $15,000 grant from the Damon Runyon Memorial Fund for Cancer Research, in July. Dr. Wangensteen will use the funds to restudy operations on patients suffering with gastric, colon, and rectal cancer.

* * *

Four new physicians to receive appointments to the staff of the Mayo Clinic in July, were **Dr. Richard W. P. Achor, Dr. James C. Broadbent, Dr. Robert L. Faucett,** and **Dr. Richard E. Symmonds.**

Dr. Achor received his medical degree from the University of Oregon Medical School, Portland, in 1945, and served with the Navy for two years. He interned and was a medical resident at Ancker Hospital, Saint Paul. In January, 1950, Dr. Achor entered the Mayo Foundation as a fellow in Medicine and received the degree of master of science in Medicine from the University of Minnesota, in July.

Dr. Broadbent received his medical degree from the Stanford University School of Medicine in 1946, and interned at Los Angeles County General Hospital. He served with the Army Medical Corps from 1947 to 1949, and entered the Mayo Foundation as a fellow in Medicine in November, 1949. Dr. Broadbent received the degree of master of science in Medicine from the University of Minnesota in July.

Dr. Faucett received the degree of master of arts in Bacteriology from the Graduate School of the University of Kansas in 1940, and his medical degree from the University of Kansas Medical School, in 1944. He interned and was a pediatric resident at the University of Kansas Hospital. From 1946 to 1948, he was a resident in psychiatry with the United States Public Health Service, Lexington, Kentucky, and from 1948 to 1949, a resident in psychiatry at the University of Minnesota Hospitals. Since 1951, Dr. Faucett has been director of the United States Public Health Service Demonstration Mental Health Clinic, College Park, Maryland.

Dr. Symmonds received his medical degree from Duke University School of Medicine in 1946, and interned at the Los Angeles County Hospital. He served with the Navy for several years. Dr. Symmonds entered the Mayo Foundation as a fellow in Obstetrics and Gynecology in April, 1950, and received the degree of master of science in Obstetrics and Gynecology from the University of Minnesota in July.

* * *

Dr. Leighton W. Larson, originally from Canistota, South Dakota, joined **Dr. J. W. Bratholdt** in his practice in Watertown, in July. Dr. Larson is a graduate of the University of Minnesota Medical School and interned at St. Luke's Hospital in Chicago. He was recently released from military service with the Army Medical corps in the Far East.

* * *

Dr. James Blake, of Hopkins, was named to represent the Minnesota State Medical Association on the eleven-member advisory council on unemployment due to temporary sickness or disability. The committee, appointed by Gov. C. Elmer Anderson in July, was authorized by the recent Legislature to make a comprehensive study of the possible need for a program to provide unemployment benefits for persons temporarily idled by reason of sickness or disability who are not compensable under workman's compensation insurance.

* * *

Dr. L. H. Stahn, who has been on the staff at the Anoka State Hospital for three years, was recalled to service with the Army and left July 1, for San Antonio, Texas.

* * *

Dr. Robert Nelson, and **Dr. Warren Kilmer,** both recently completing their internships at Minneapolis General Hospital, began practice in International Falls in July. Dr. Nelson was graduated from the University of Minnesota Medical School, and Dr. Kilmer, from the University of Indiana Medical School.

Insurance at a Saving Druggists' Mutual Insurance Company OF IOWA, ALGONA, IOWA *Prompt Loss Service*
Fire - Tornado - Automobile Insurance
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

Dr. Anthony H. Kelly, who recently completed a fellowship in surgery in the Mayo Foundation, left July 8 for an extended tour of Europe which will include clinical visits in many cities and attendance at a surgical congress in Lisbon, Portugal.

* * *

Four physicians to enter the Mayo Foundation as fellows during the summer quarter, which began July 5, are the sons of Mayo Clinic staff members, and one, the son of an emeritus Clinic physician.

Dr. John A. Higgins, a graduate of the University of Minnesota Medical School, is the son of **Dr. George M. Higgins,** of the Mayo Clinic.

Dr. Louis A. Brunsting, Jr., a graduate of the University of Michigan Medical School, is the son of **Dr. Louis A. Brunsting,** of the Mayo Clinic staff.

Dr. Louis A. Buie, Jr., a graduate of the University of Minnesota Medical School, is the son of **Dr. Louis A. Buie, Sr.,** of the Mayo Clinic staff.

Dr. Richard M. Moersch, a graduate of Harvard Medical School, is the son of **Dr. H. J. Moersch,** of the Mayo Clinic staff.

Dr. Henry W. Pemberton, a graduate of the George Washington University School of Medicine, is the son of **Dr. John deJarnette Pemberton,** an emeritus member of the Mayo Clinic staff.

* * *

Dr. Arthur T. Laird, who retired from the Moose Lake State Hospital staff July 15, was honored by the hospital employes and their families at a picnic held July 7.

Dr. Laird's four years at Moose Lake State Hospital are only the most recent of a career of over half a century of contributions to medicine. The first eleven years of his career, Dr. Laird spent in private practice in Albany, New York, and as a member of the medical staff at Trudeau Sanatorium, Saranac Lake, New York. Dr. Laird came to Nopeming Sanatorium as superintendent in 1911, and served in this capacity for thirty years. During World War I, he was chosen by the Rockefeller Foundation to work with the French government in demonstrating the most recent advances in the care of tuberculosis patients.

Following his retirement from Nopeming Sanatorium, Dr. Laird became associated with the Duluth Clinic until 1947, when he came to Moose Lake for several months to study conditions in Minnesota mental hospitals. In 1949, he returned as a permanent member of the staff.

* * *

Dr. Merrill D. Chesler, of Minneapolis, spoke to the members of the Stearns-Benton County Medical Society at their meeting held July 16, at the St. Michael's Hospital, Sauk Centre. His talk, illustrated with slides, was entitled "Skin Grafts, Flaps and Related Plastic Problems."

* * *

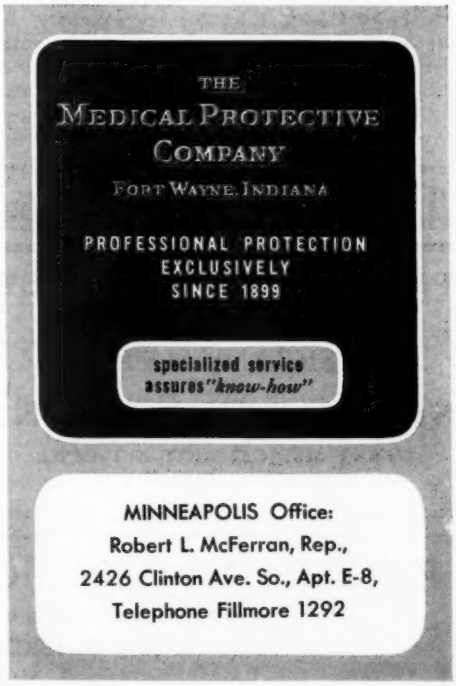
Dr. Edward Burleigh, a graduate of the University of Louisiana Medical School, and **Dr. Jack Bonner,** a graduate of the University of Minnesota Medical School, joined the East Range Clinic of Virginia, in July.

Complete Laboratories in Minneapolis and Principal Cities of Upper Midwest

EXECUTIVE OFFICES
MINNEAPOLIS, MINN.

Benson
OPTICAL COMPANY

SINCE 1913



Dr. William R. Glenny, of Minneapolis, joined the staff of the Osseo Clinic early in July. Dr. Glenny was graduated from the University of Minnesota Medical School and served in the Navy during World War II.

* * *

Dr. J. A. Malerich, Jr., joined his father, **Dr. J. A. Malerich, Sr.,** in the practice of medicine in Saint Paul, in July. Dr. Malerich, Jr., was graduated from the University of Minnesota Medical School and completed his internship at Ancker Hospital in Saint Paul.

* * *

Major appointments in health and related fields made by the President recently include:

Dr. Melvin A. Casberg, former dean of St. Louis University Medical School who has been serving as a special assistant to the Secretary, was appointed to be Assistant Secretary of Defense for Health and Medical Affairs, a post whose establishment has been long advocated by the American Medical Association. Dr. Casberg will supervise the department's medical programs and advise the Secretary of Defense on health policies.

Harvey V. Higley, of Marinette, Wisconsin, chairman of the board, Ansul Chemical Company, was appointed to be head of the Veterans Administration. Mr. Higley has been active for many years in the American Legion, serving as state commander and member of the Legion's National Executive Committee and National Retirement Committee. He succeeds Carl R. Gray, Jr., who recently resigned.

Russell R. Larmon, professor of administration at Dartmouth College, was appointed to be an Assistant Secretary of Health, Education, and Welfare. Prof. Larmon is one of two Assistant Secretaries provided under Reorganization Plan 1 which elevated the Federal Security Agency to cabinet status. Prof. Larmon has served as consultant on many New Hampshire state commissions.

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

MINNESOTA BLUE CROSS-BLUE SHIELD PLANS

Analysis of Blue Shield claim rejections from October 1, 1952, to date for those rejections based on the grounds of pre-existing conditions discloses several interesting facts. First, it reveals an actually smaller number of such rejections; secondly, it shows a reduction in the percentage of claims disallowed for this reason; and finally, dissatisfaction and misunderstanding on the part of both subscribers and doctors regarding such claims is definitely decreasing.

On October 1, 1952, the revised Blue Shield contract went into effect thereby establishing a new standard for deciding claims involving pre-existing conditions. Prior to October 1, 1952, the Blue Shield contract required a ten-month waiting period before benefits could be paid for treatment of those conditions which, on the date of receipt of the application, were known to exist by the subscriber or any member of his family. The new contract now provides that benefits are not available for the treatment of any physical condition, ailment, or disease which, known or unknown to the participant subscriber, may be considered from a medical standpoint to have been in existence on the effective date of the contract unless the participating subscriber has been covered under the contract for at least ten consecutive months at the time the services are rendered. The most important change, then, is the elimination of the requirement that the subscriber know that he has had a particular condition, ailment, or disease. Now, under the new contract, if services are rendered to a subscriber who has been covered by the contract less than ten months, and the condition is one which, from a medical standpoint, could be said to have been in existence on the effective date of the contract, the claim cannot be approved.

The current review of operations from the time the new contract went into effect until the present shows a decided improvement in relationships between Blue Shield and the doctors, between Blue Shield and the subscribers, and between the doctors and the patients regarding this matter. The claims can now be explained on a much more factual basis and disagreements with subscribers are greatly reduced.

The Professional Relations Department reports that in discussions with the doctors in their offices, understanding of the clause and its purpose is much clearer, and the clause is approved in almost every instance. The same information comes from the Claims Department wherein contact is had with subscribers either by correspondence, telephone conversations, or personal calls. Both subscribers and doctors are apparently realizing that Blue Shield cannot afford to pay benefits to those who join the plan after they discover that they might need medical, surgical, or obstetrical services. It is being

PATTERSON SURGICAL SUPPLY COMPANY

130 W. Seventh Street, St. Paul 2, Minn.

HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT

Cedar 1781-82-83

understood that waiting periods for pre-existing conditions and maternity care are necessary to avoid costly and dangerous over-utilization of Blue Shield benefits. Furthermore, the records under the new contract are showing that the change in this clause has had distinctly beneficial effect in producing this result. Because of safeguards such as this, the public, the medical profession, and Blue Shield can look forward to the attainment of their mutual goal—adequate medical care at the lowest possible cost.

On July 1, 1953, University Hospital became an affiliated hospital of the Blue Cross plan. All subscribers going to University Hospital will now receive full contract benefits while hospitalized there.

Blue Cross is now celebrating its twentieth anniversary. From a humble beginning in 1933 with only eight hospitals backing the plan, Blue Cross has grown by leaps and bounds. The concept of prepayment of hospital care has proven to be wise and farseeing, for today over 169 Minnesota hospitals sponsor the Blue Cross plan.

Blue Cross was designed to provide the best hospital care to people who needed care at the lowest possible cost. Evidence of the fact that Blue Cross is providing more people with the best care is that we now have nearly one million Minnesotans protected (one out of every three), a remarkable growth.

Since 1933, Blue Cross has paid over $83,000,000 in benefits to subscribers.

Hazelden Foundation (non-profit) is dedicated to the treatment of problem drinking through research, education, and rehabilitation. It has ideal facilities on Lake Chisago near Center City, Minn. Your inspection is invited at any time.

HAZELDEN FOUNDATION

Let us send you complete information

A NON-PROFIT ORGANIZATION

2639 University Avenue **St. Paul 14, Minnesota**

24-hour service **Phone NEstor 5958**

BROWN & DAY
SERVICE QUALITY

For
Professional Supplies
and
Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

OPERATIVE SURGERY. 2 Vols. Sixth Edition. Guy W. Horsley, B.S., M.D., F.A.C.S., Associate Professor of Surgery, Medical College of Virginia; Attending Surgeon, St. Elizabeth's Hospital, Richmond, Virginia; and Isaac A. Bigger, M.D., F.A.C.S., Professor of Surgery, Medical College of Virginia, Surgeon-in-Chief, Medical College of Virginia Hospital, Richmond. Vol. 1, 714 pages; Vol. 2, 1579 pages. Illus. Price $30.00, cloth. St. Louis: C. V. Mosby Co., 1953.

ANNUAL REPORT ON THE RESULTS OF TREATMENT IN CARCINOMA OF THE UTERUS. Statement of Results Obtained in 1946 and previous years. 8th Volume. Sponsored by American Cancer Society, British Empire Cancer Campaign, Cancerföreningen, Stockholm, Damon Runyon Memorial Fund, New York, Landsföreningen mot Kreft, Oslo, and National Cancer Institute of Canada. 247 pages. Available on application. Stockholm 60: Editorial Office, Radiumhemmet, 1953.

STUDIES IN VISUAL OPTICS. By Joseph I. Pascal, B.S., M.A., O.D., M.D., Licentiate in Optometry and in Medicine by the University of the State of New York; Director of Eye Department, Stuyvesant Polyclinic; Attending Ophthalmologist, New York Polyclinic Medical School and Hospital, Outpatient Department; Lecturer in Ophthalmology, New York Polyclinic Medical School and Hospital. 800 pages. Illus. Price $12.50. St. Louis: C. V. Mosby Co., 1952.

In this book, Dr. Pascal presents the theoretical and practical aspects of many phases of visual optics and refraction techniques. His optometric as well as medical training and experience give him a unique orientation on these subjects.

Dr. Pascal's formula for ophthalmic calculations is simple and effective and well presented. His concept of the accommodative unit clarifies such things as the earlier onset of presbyopia in hyperopes.

This book is valuable and interesting additional reading, but would not replace the standard simpler textbooks for the novice.

J. A. McNeill, M.D.

PROGRESS IN FUNDAMENTAL MEDICINE. J. F. A. McManus, Editor. 316 pages. Illus. Price $9.00. Philadelphia: Lea & Febiger, 1952.

The editor of Progress in Fundamental Medicine has assembled a series of monographs, presenting the current information, primarily pathological, but including its application to clinical medicine. The subject matter includes parenteral nutrition with an exhaustive survey of the use of protein hydrolysates and amino acid mixtures; a chapter on the liver, histochemistry, viral hepatitis and other pertinent subjects; coronary disease considered not a pathological entity, but as a symptom complex.

Other topics, in a similar manner, include the histochemical approach to pathology, melanotic tumors of the skin, systemic lupus erythematosus, carcinoma *in situ* and non-silica pneumonoconioses.

This volume gives a complete summary of present-day knowledge of the various subjects including a very complete table of references. This will prove of great value to the student as well as the clinical practitioner, in keeping informed of the rapid advances in these various phases of modern medicine.

C. K. Williams, M.D.

RADIUM RENTAL SERVICE
4340 CEDARWOOD ROAD
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

The Medical Book Guild of America offers a large list of books by nationally famous editors at a substantial saving with special gift "bonus" books. (See page 808).

Buy
Defense
Bonds

DANIELSON MEDICAL ARTS PHARMACY, INC.

PHONES:
ATLANTIC 3317
ATLANTIC 3318

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1